

FIG. 1

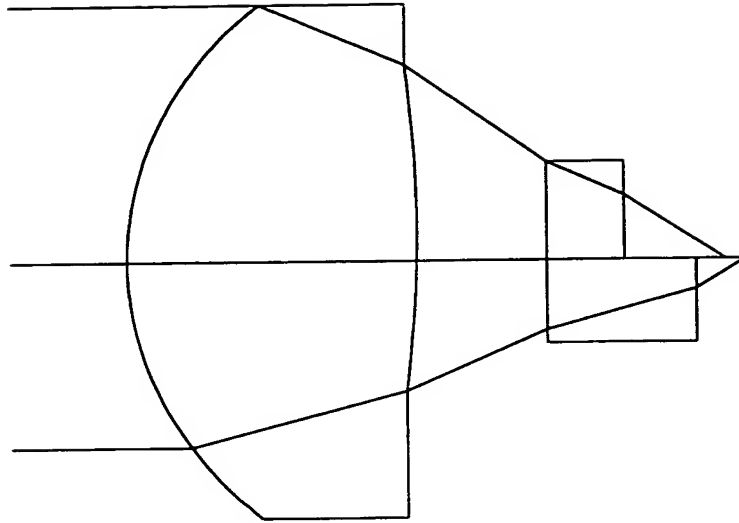


FIG. 2

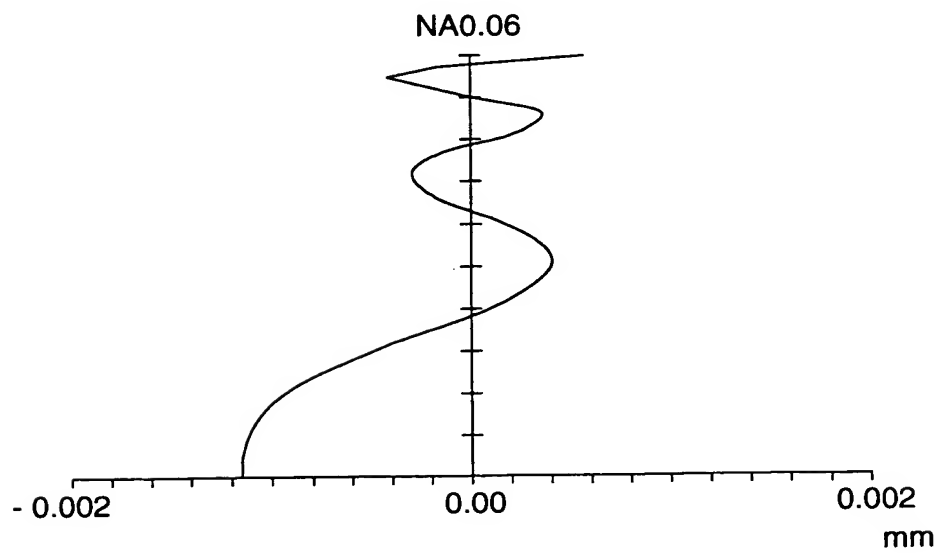


FIG. 3

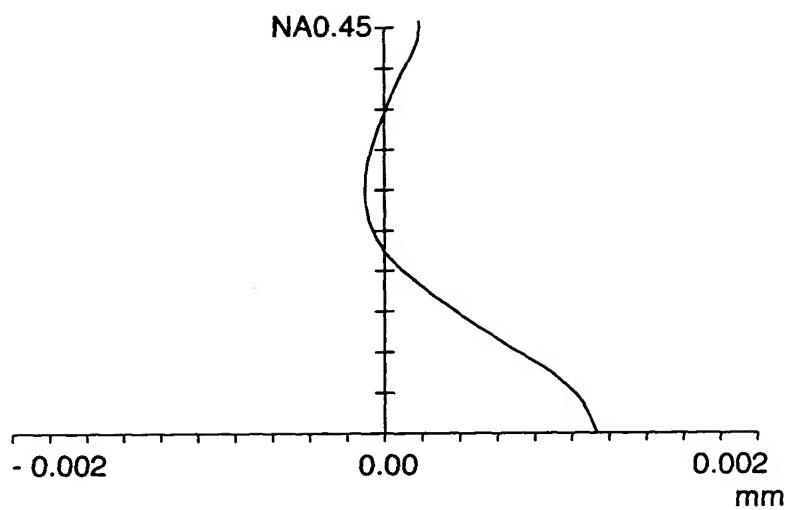


FIG. 4

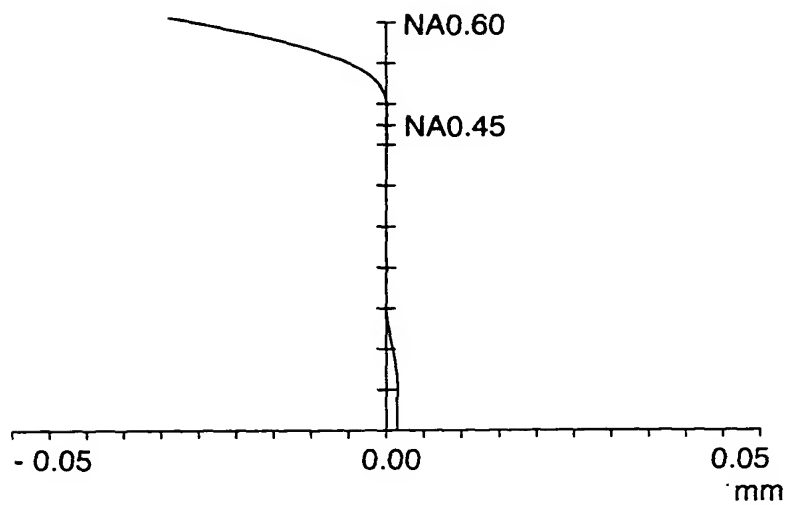


FIG. 5

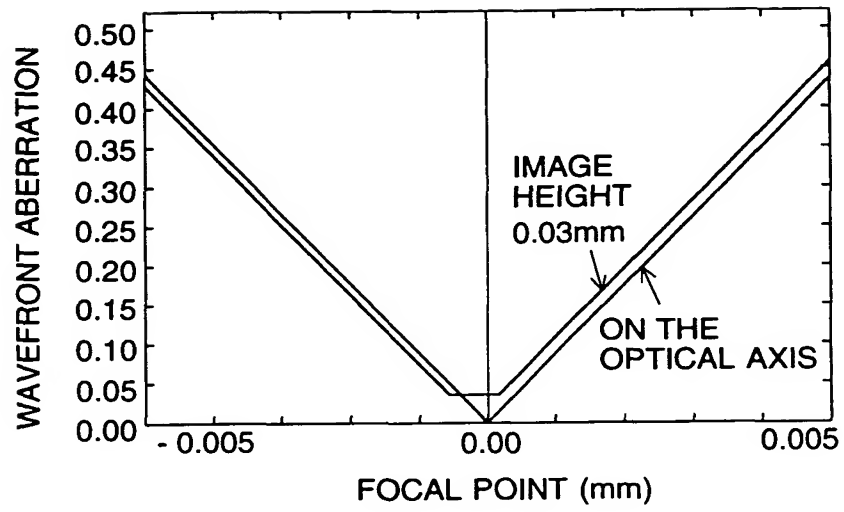


FIG. 6

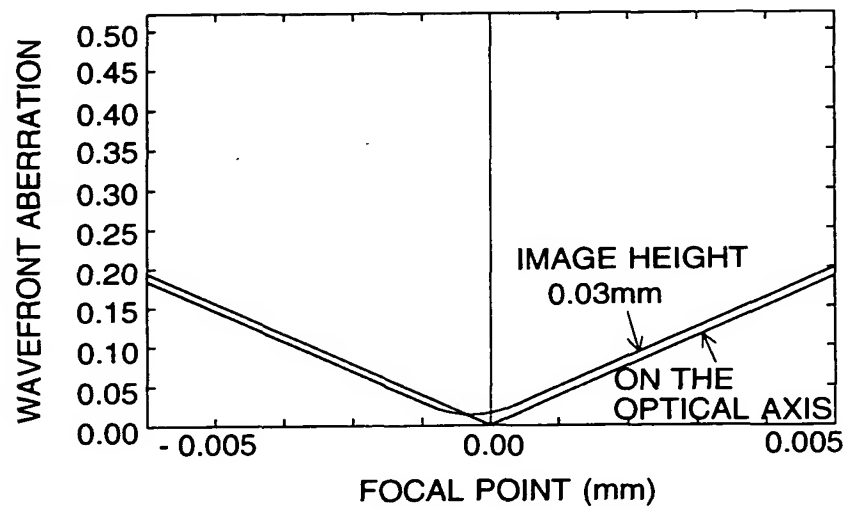


FIG. 7

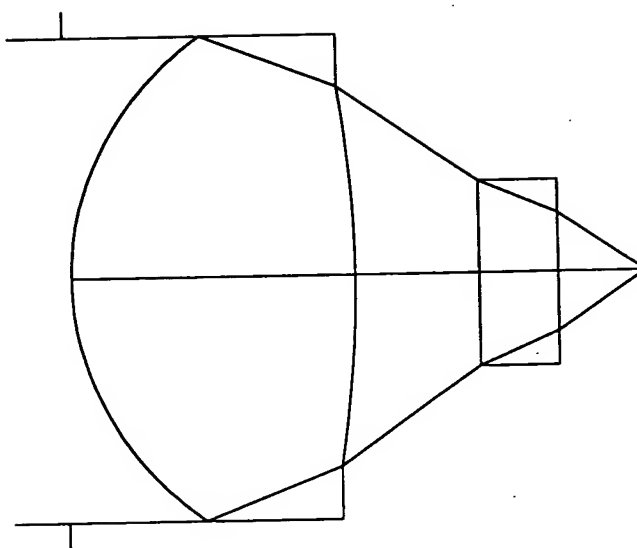


FIG. 8

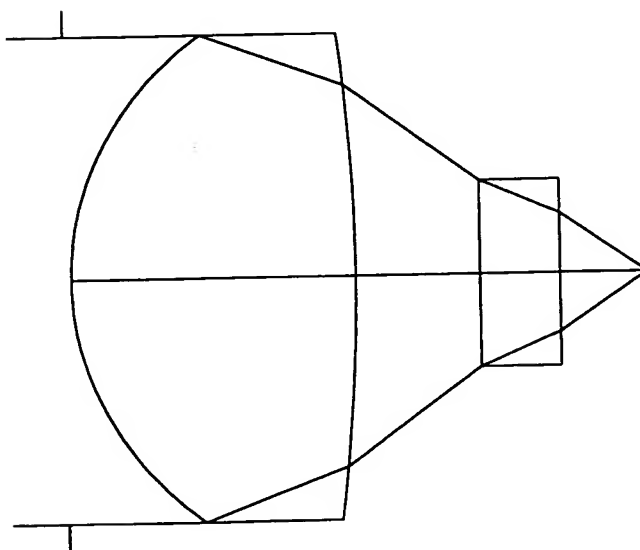


FIG. 9

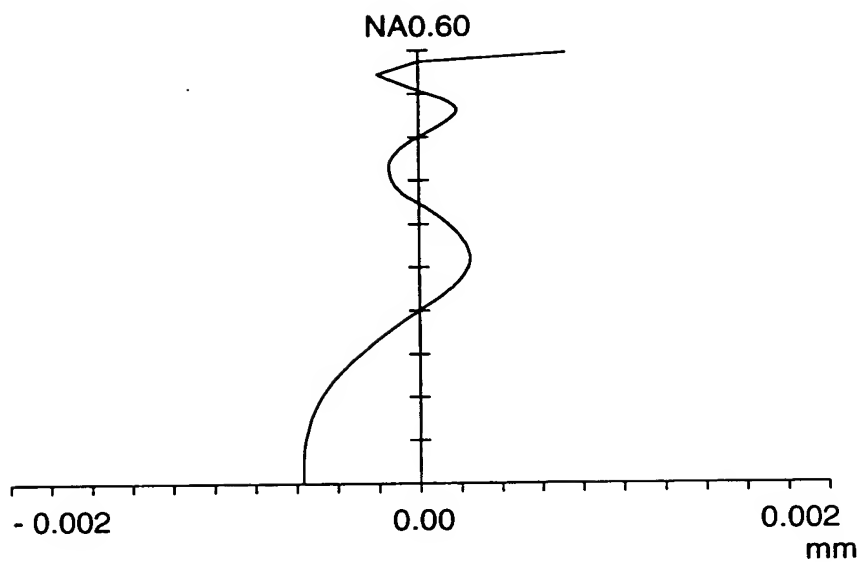


FIG. 10

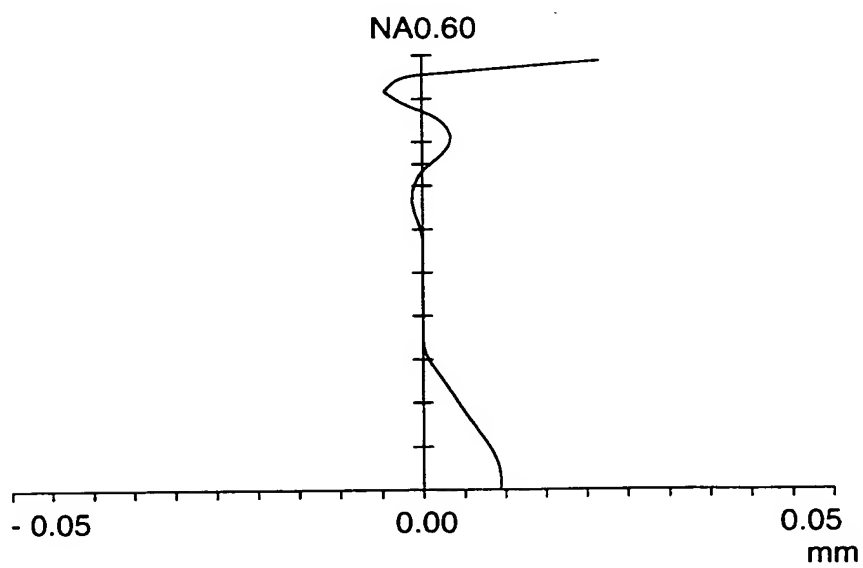


FIG. 11

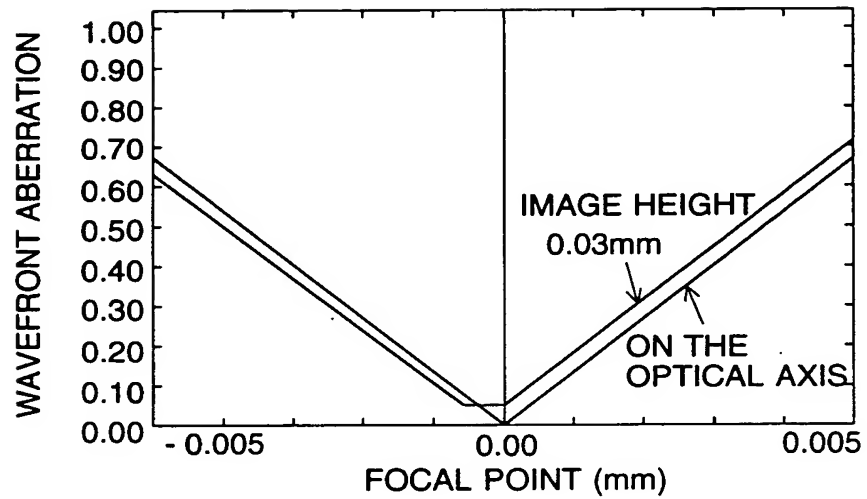


FIG. 12

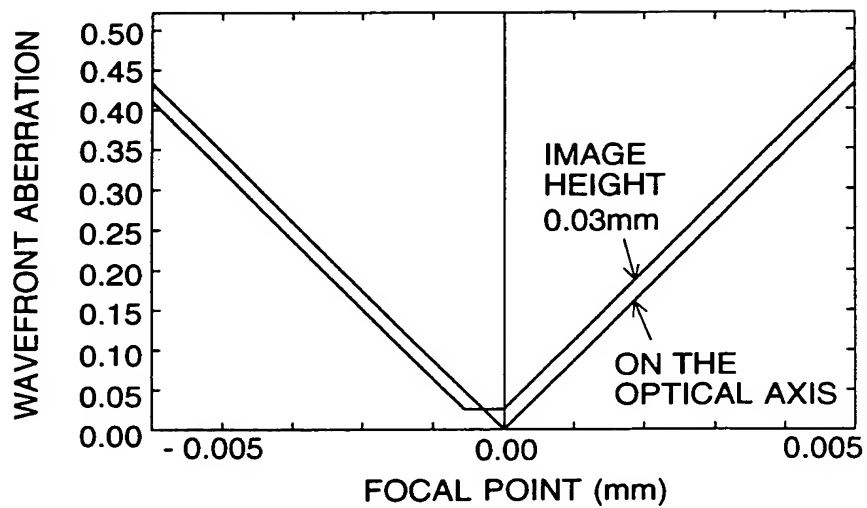


FIG. 13

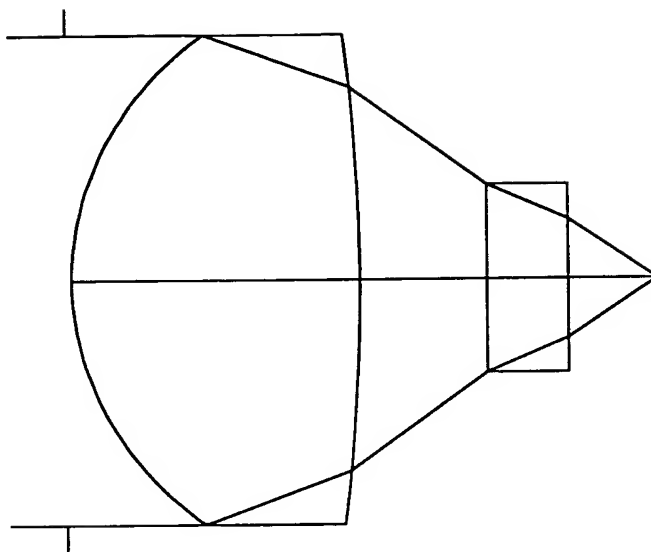


FIG. 14

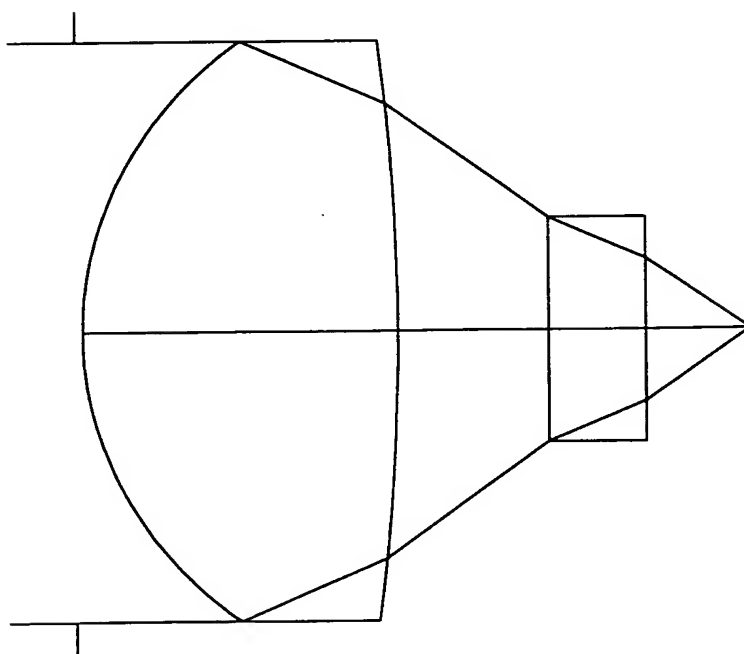


FIG. 15

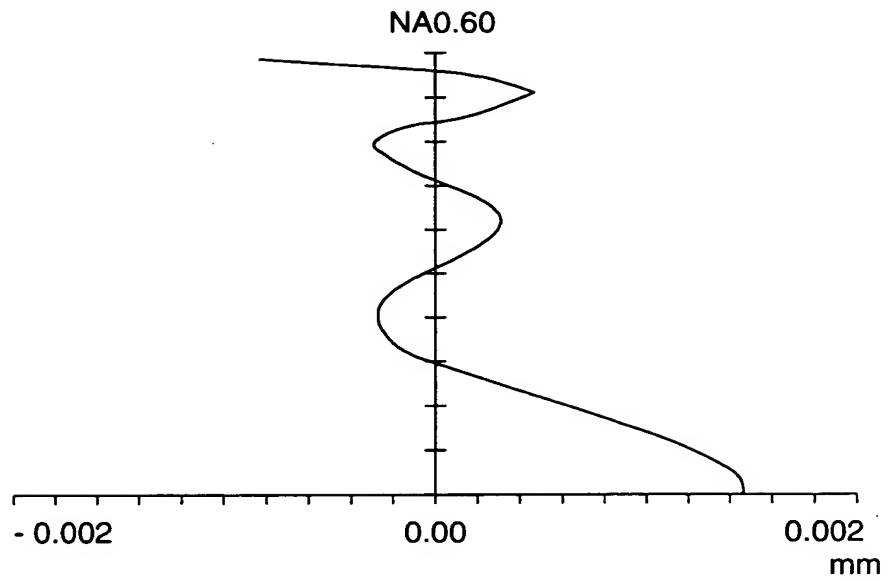


FIG. 16

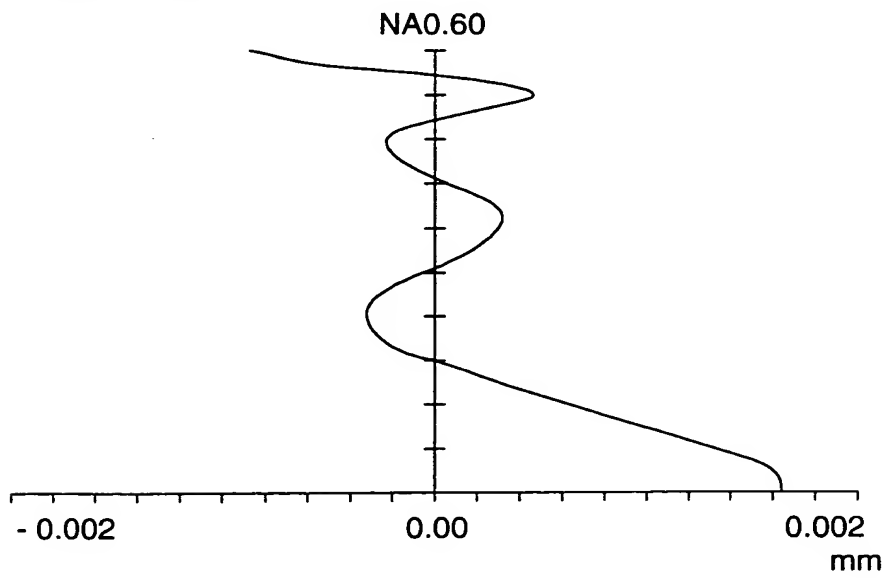


FIG. 17

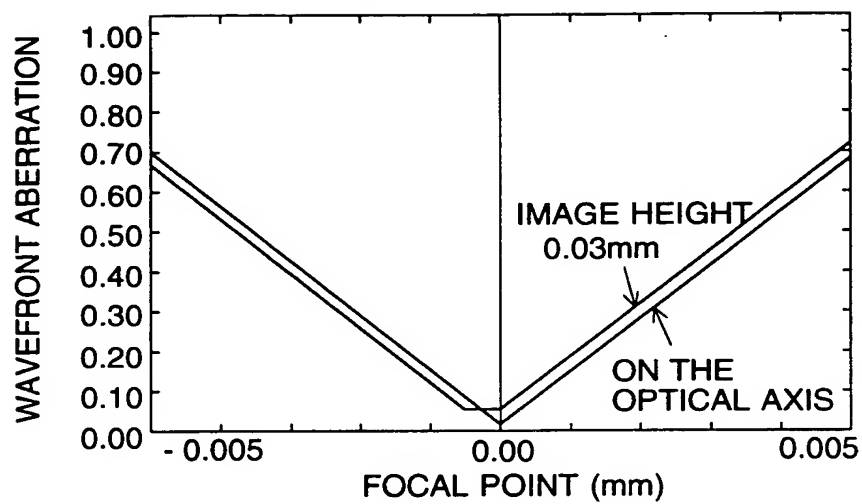


FIG. 18

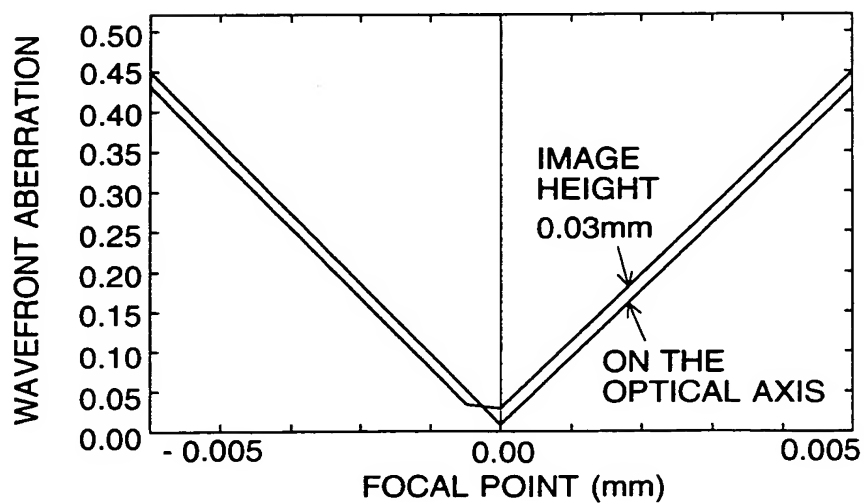


FIG. 19

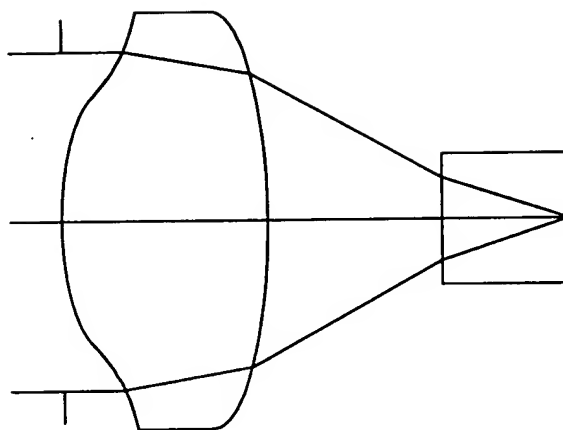


FIG. 20

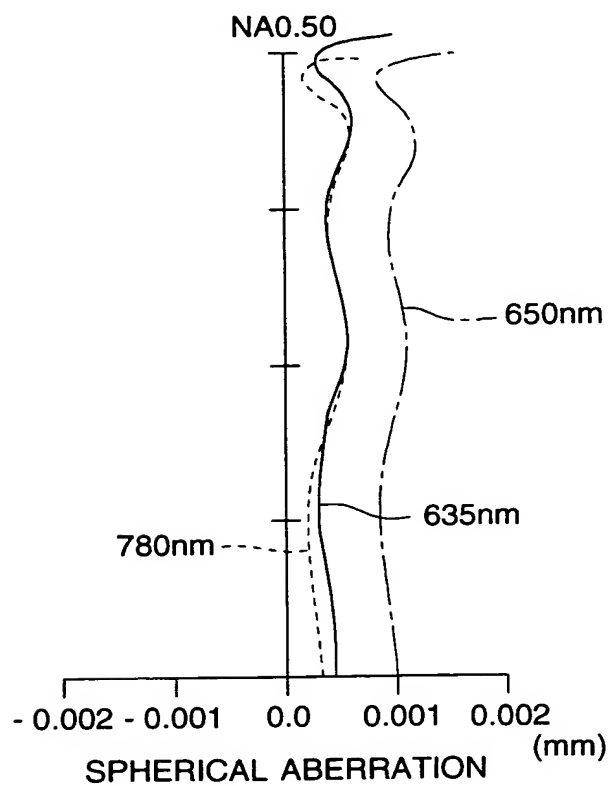


FIG. 21

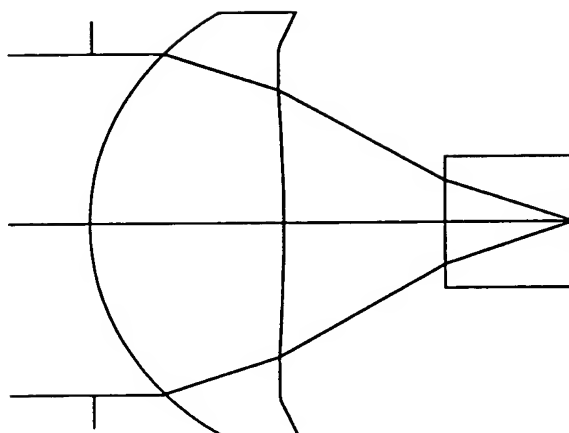


FIG. 22

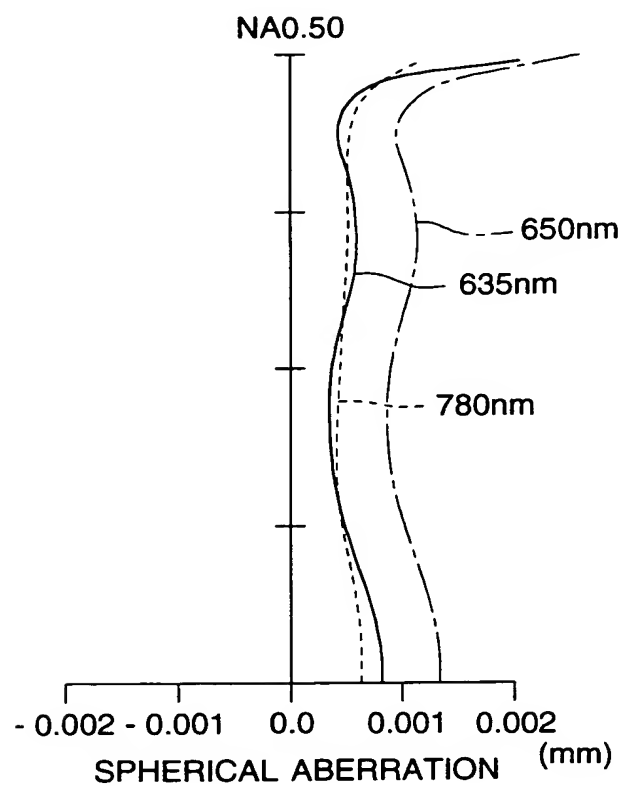


FIG. 23

CROSS SECTIONAL VIEW OF EXAMPLE 6 AND ILLUSTRATION  
SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda = 650\text{nm}$

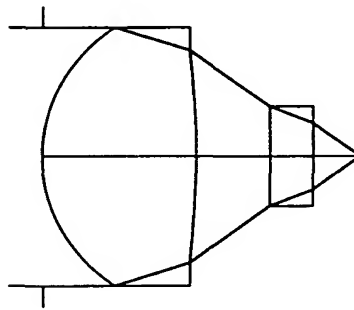


FIG. 24

CROSS SECTIONAL VIEW OF EXAMPLE 6 AND ILLUSTRATION  
SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda = 780\text{nm}$  (NA0.5)

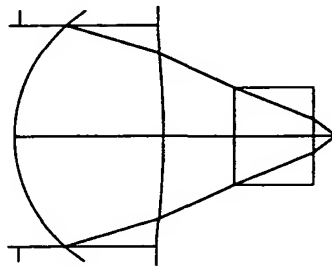


FIG. 25

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda = 650 \pm 10 \text{nm}$  IN EXAMPLE 6

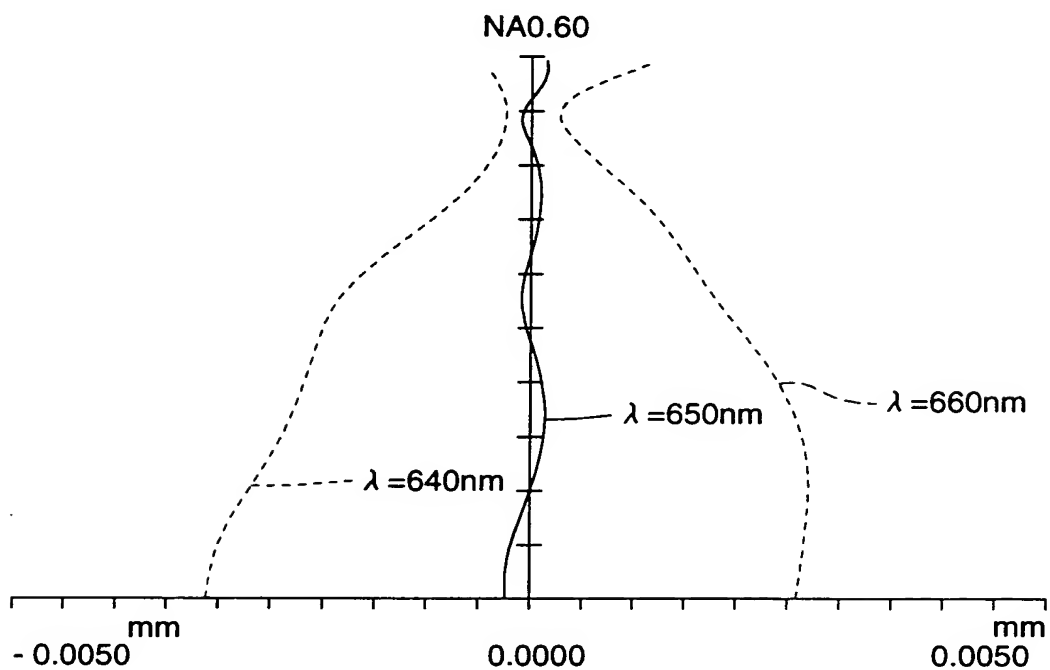


FIG. 26

DIAGRAM SHOWING SPHERICAL ABERRATION (NA0.5)  
FOR WAVELENGTH  $\lambda = 780 \pm 10 \text{nm}$  IN EXAMPLE 6

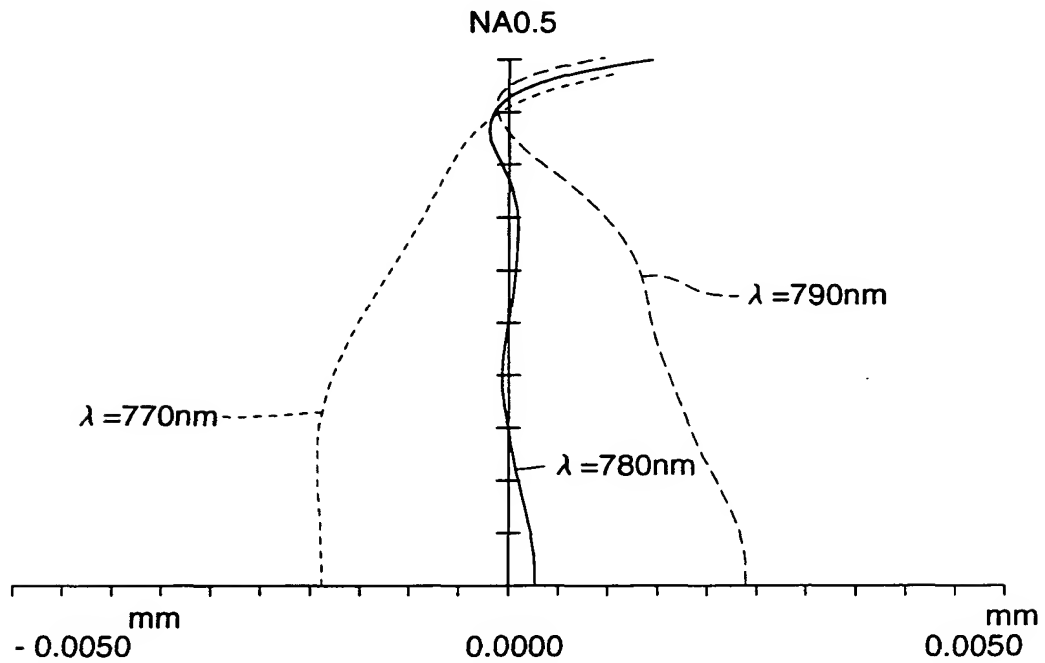


FIG. 27

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda = 780\text{nm}$  IN EXAMPLE 6

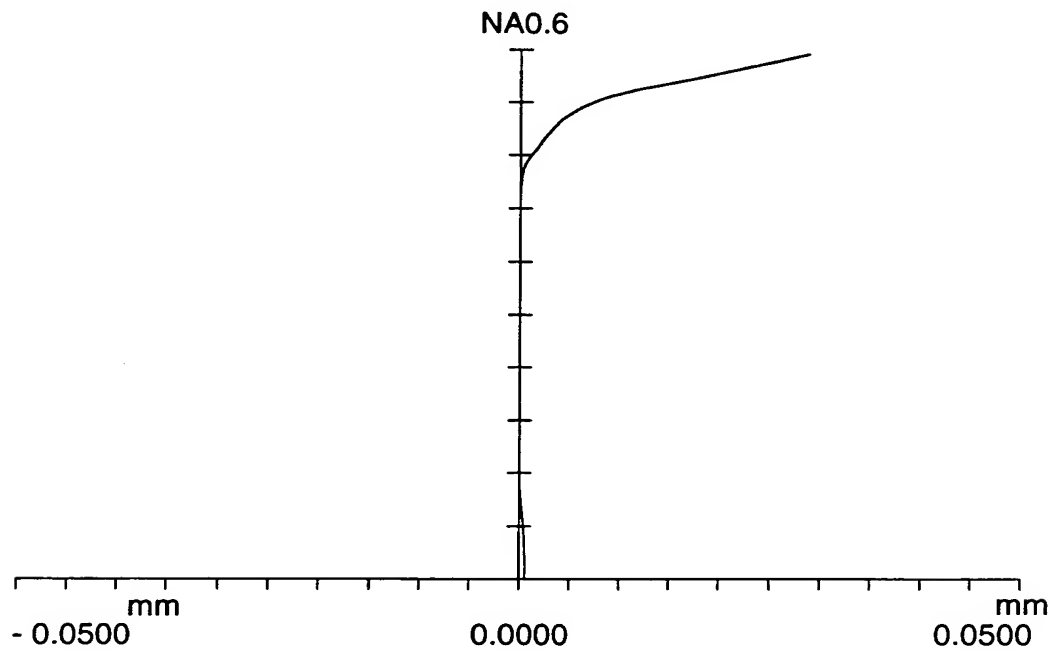


FIG. 28

DIAGRAM SHOWING WAVEFRONT ABERRATION RMS  
FOR WAVELENGTH  $\lambda = 650\text{nm}$  IN EXAMPLE 6

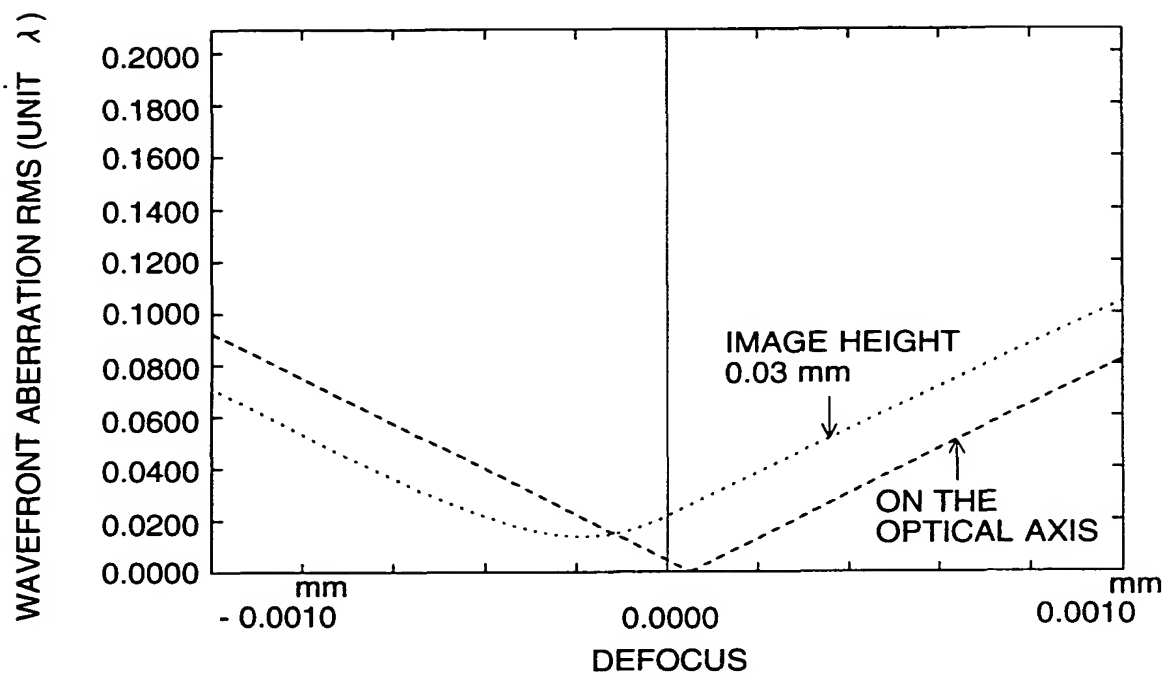


FIG. 29

DIAGRAM SHOWING WAVEFRONT ABERRATION RMS  
 FOR WAVELENGTH  $\lambda = 780\text{nm}$  (NA0.5) IN EXAMPLE 6

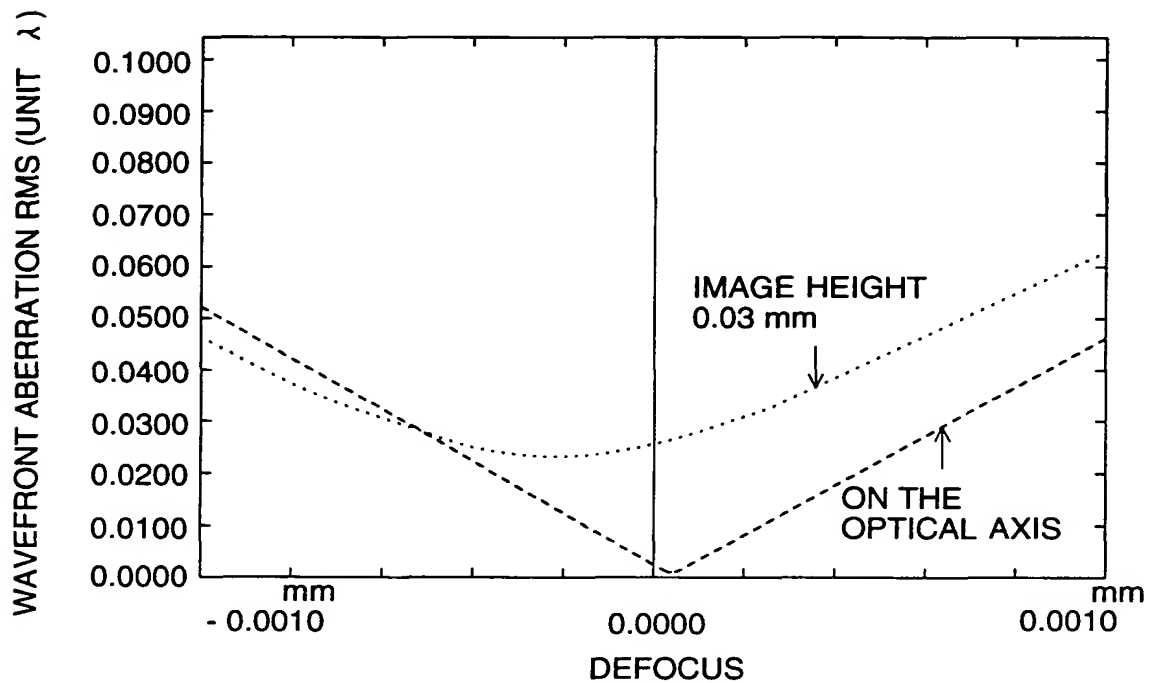


FIG. 30

CROSS SECTIONAL VIEW OF EXAMPLE 7 AND ILLUSTRATION  
 SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda = 650\text{nm}$

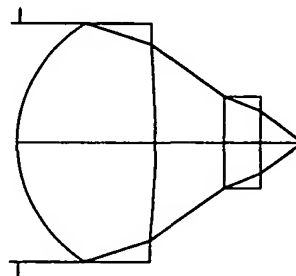


FIG. 31

CROSS SECTIONAL VIEW OF EXAMPLE 7 AND ILLUSTRATION  
SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda=780\text{nm}$  (NA0.5)

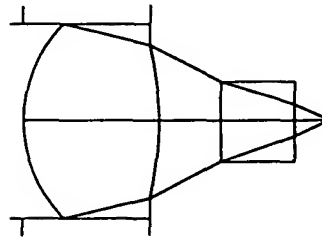


FIG. 32

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda=650\pm 10\text{nm}$  IN EXAMPLE 7

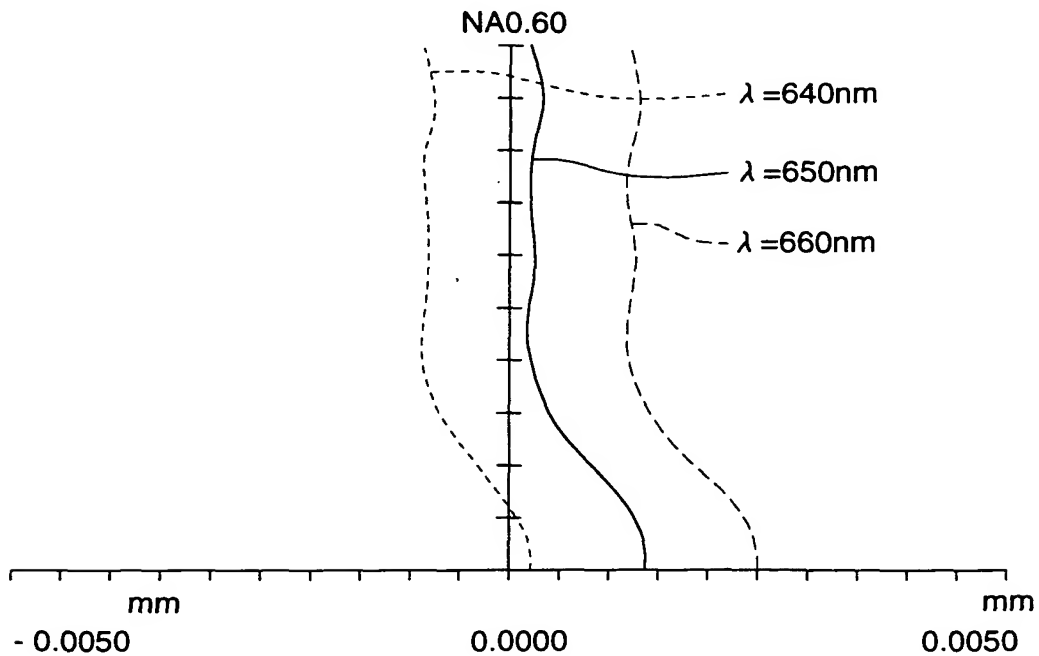


FIG. 33

DIAGRAM SHOWING SPHERICAL ABERRATION (NA0.50)  
FOR WAVELENGTH  $\lambda = 780 \pm 10 \text{ nm}$  IN EXAMPLE 7

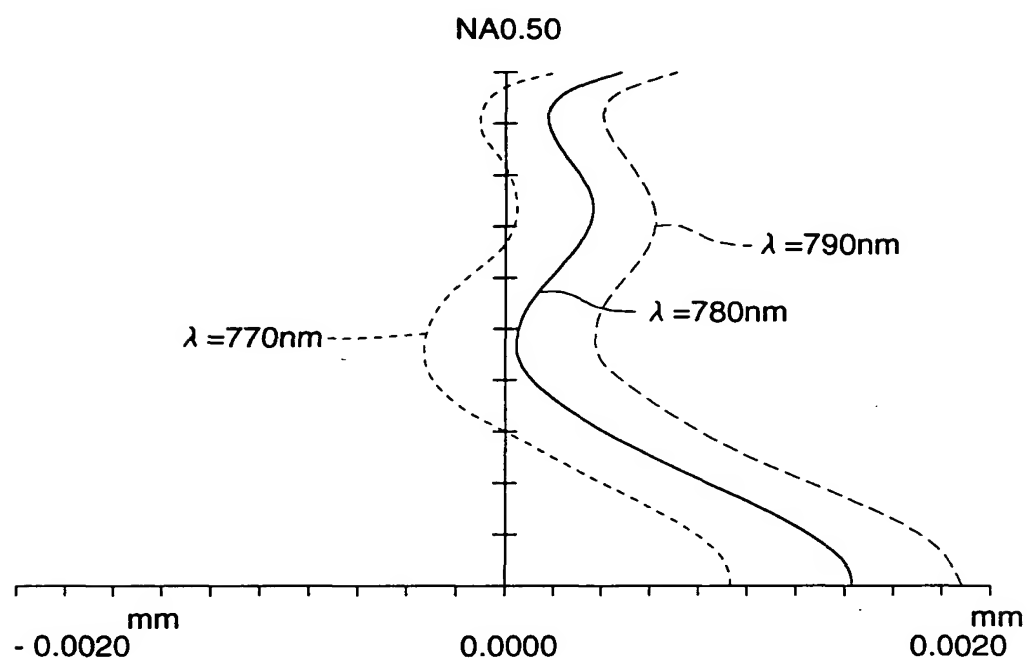


FIG. 34

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda = 780\text{nm}$  (NA0.60) IN EXAMPLE 7

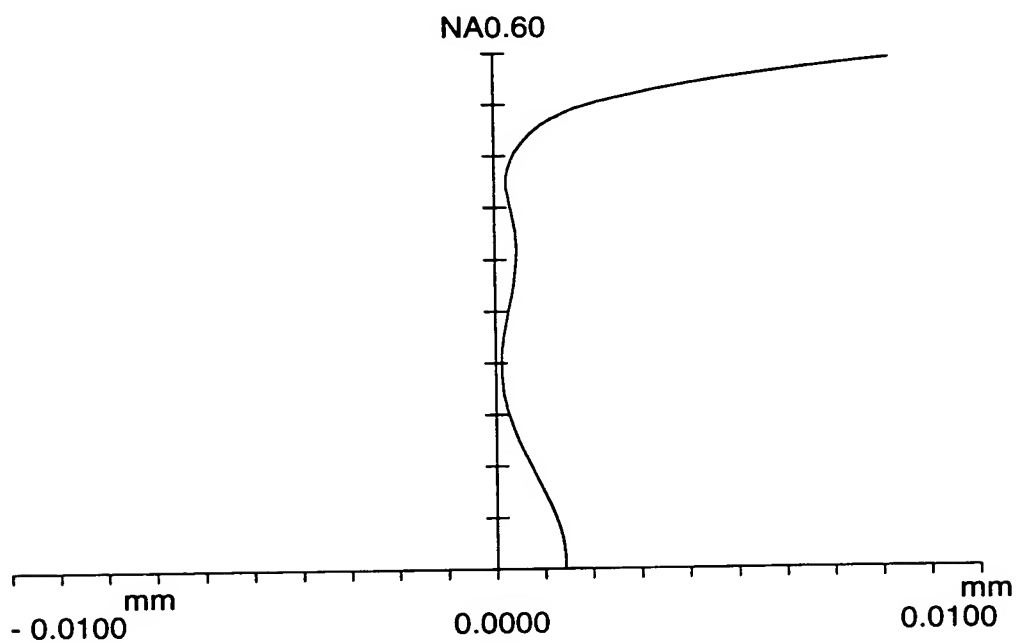


FIG. 35

DIAGRAM SHOWING WAVEFRONT ABERRATION RMS  
FOR WAVELENGTH  $\lambda = 650\text{nm}$  IN EXAMPLE 7

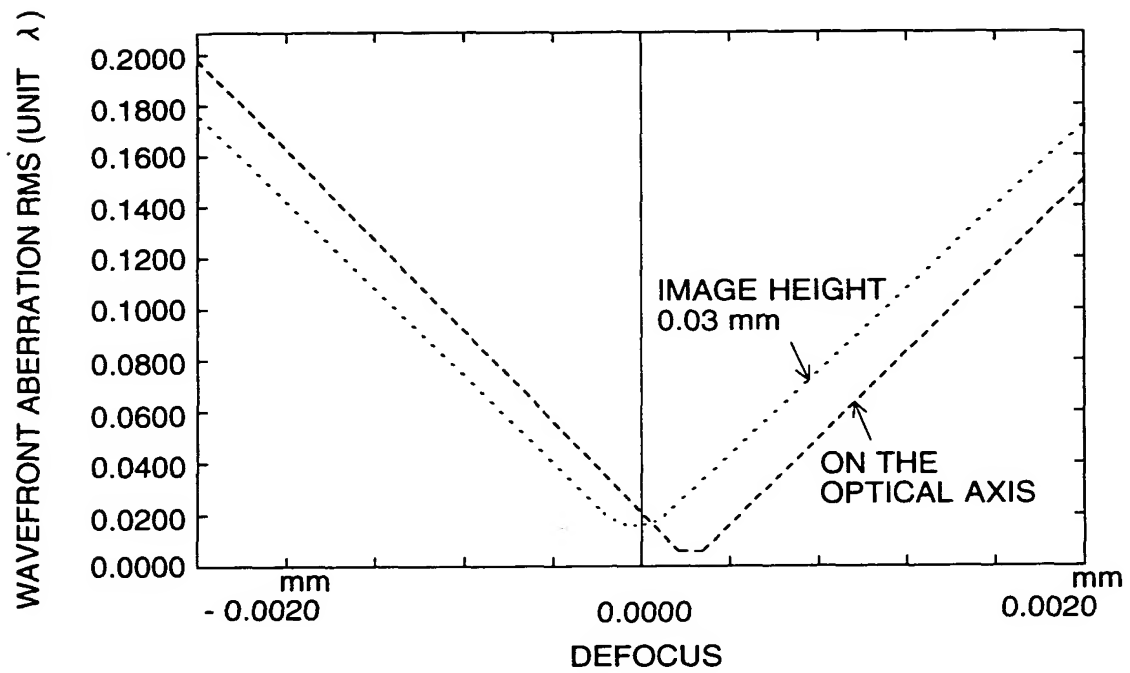


FIG. 36

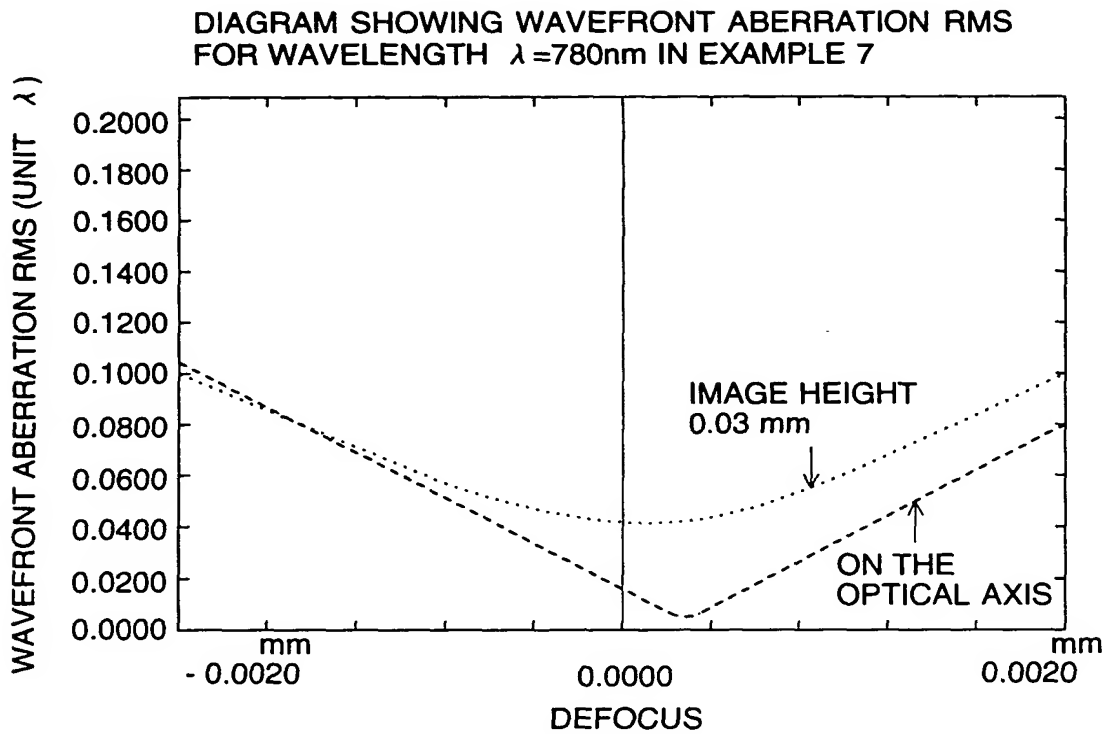


FIG. 37

CROSS SECTIONAL VIEW OF EXAMPLE 8 AND ILLUSTRATION  
 SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda = 650\text{nm}$

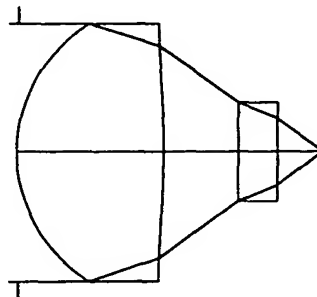


FIG. 38

CROSS SECTIONAL VIEW OF EXAMPLE 8 AND ILLUSTRATION  
SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda = 780\text{nm}$

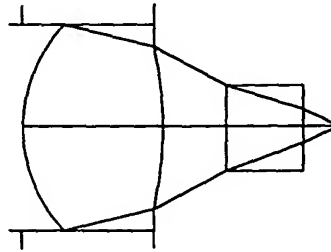


FIG. 39

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda = 650 \pm 10\text{nm}$  IN EXAMPLE 8

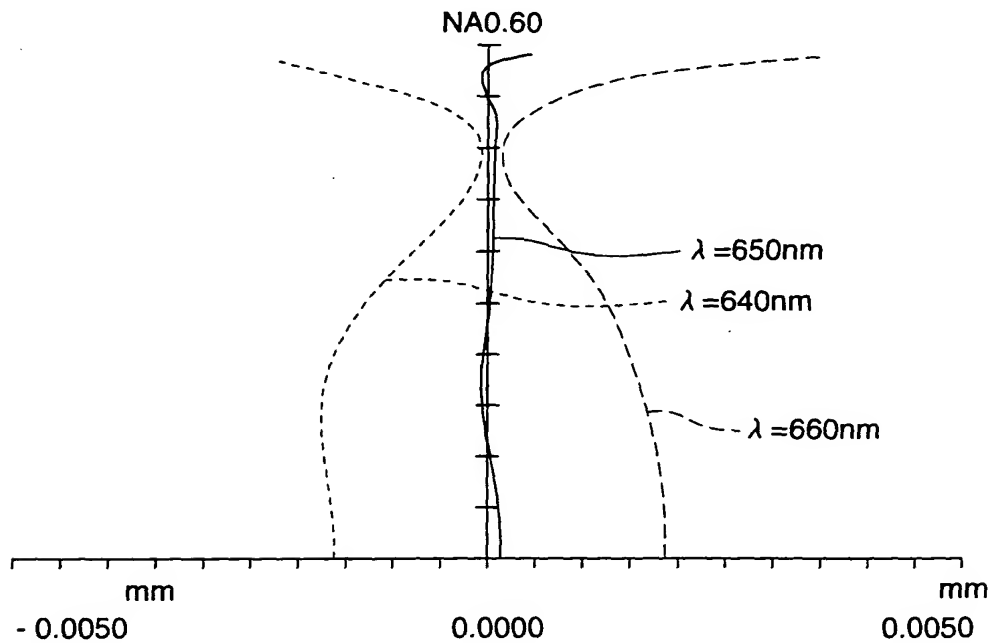


FIG. 40

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda = 780 \pm 10 \text{ nm}$  IN EXAMPLE 8

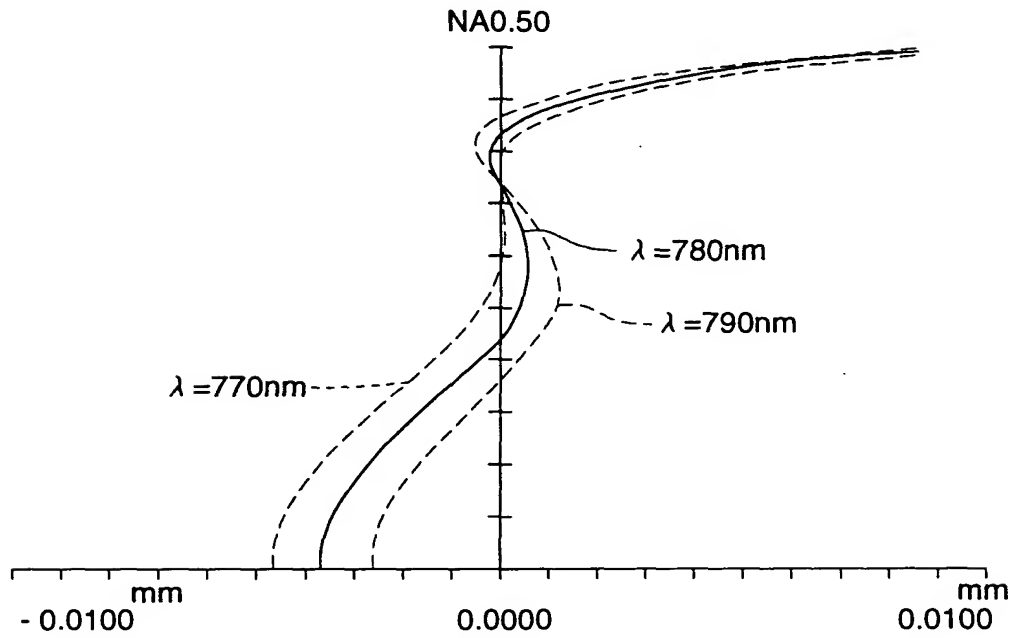


FIG. 41

DIAGRAM SHOWING SPHERICAL ABERRATION  
FOR WAVELENGTH  $\lambda = 780\text{nm}$  (NA0.60) IN EXAMPLE 8

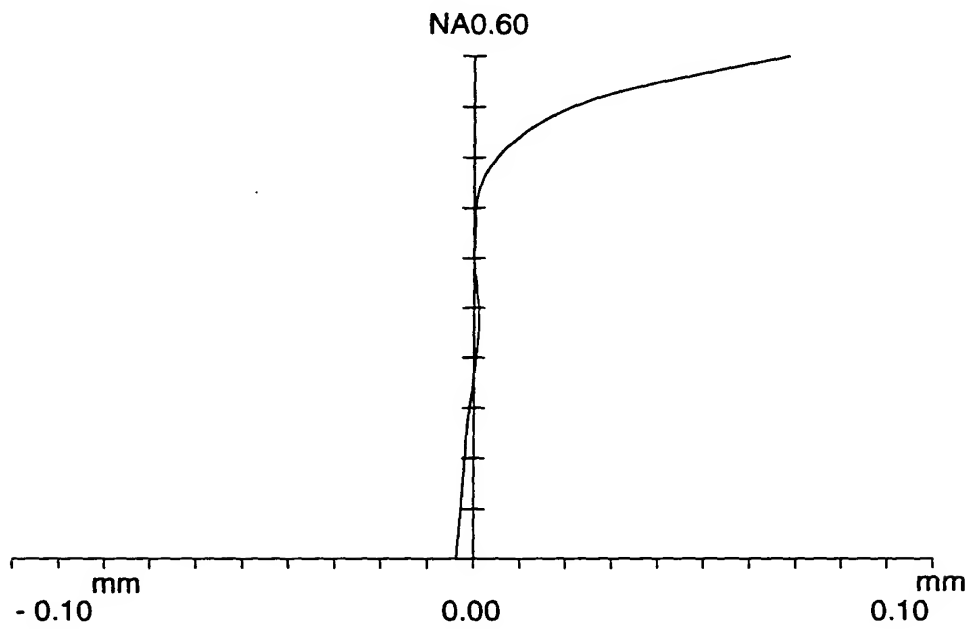


FIG. 42

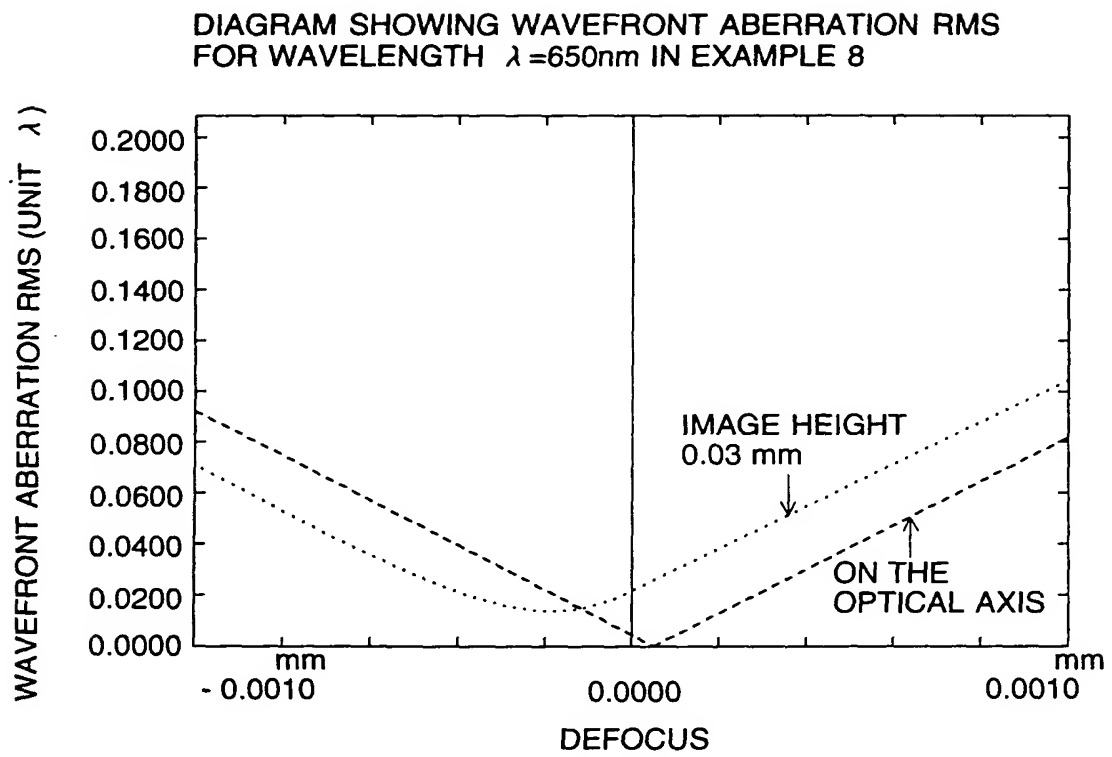


FIG. 43

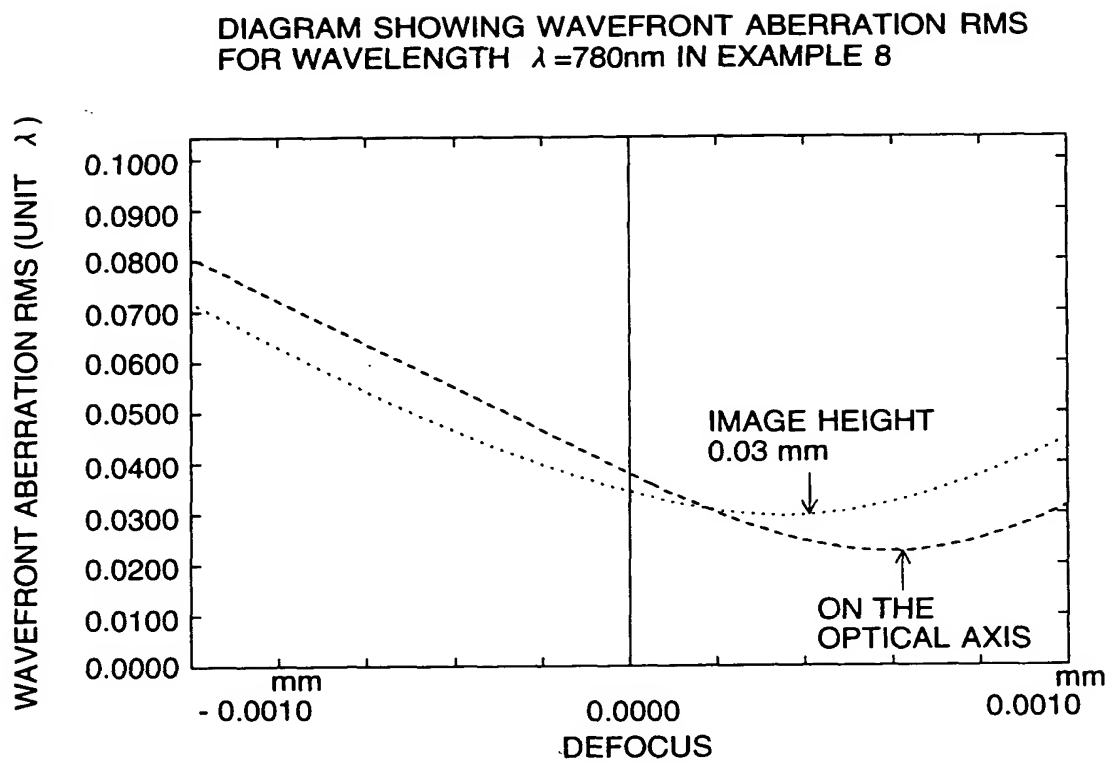
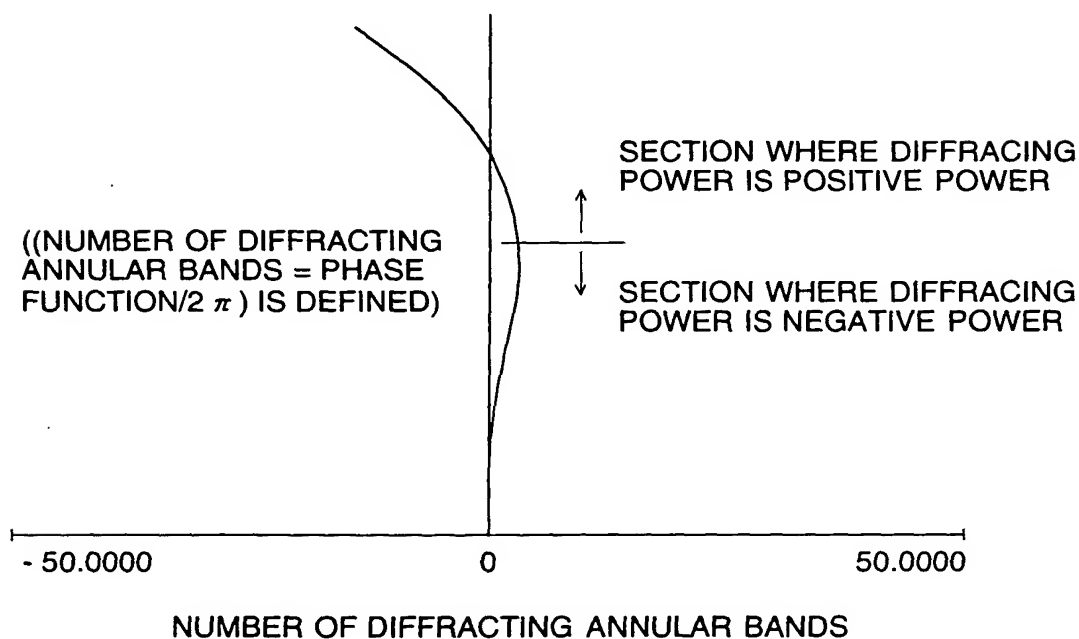


FIG. 44

RELATIONSHIP BETWEEN NUMBER OF DIFFRACTING  
ANNULAR BANDS AND HEIGHT FROM THE OPTICAL  
AXIS IN EXAMPLE 6

HMAX 2.0084 (HEIGHT FROM THE OPTICAL AXIS)



## FIG. 45

RELATIONSHIP BETWEEN NUMBER OF DIFFRACTING  
ANNULAR BANDS AND HEIGHT FROM THE OPTICAL  
AXIS IN EXAMPLE 7

HMAX 2.0082 (HEIGHT FROM THE OPTICAL AXIS)

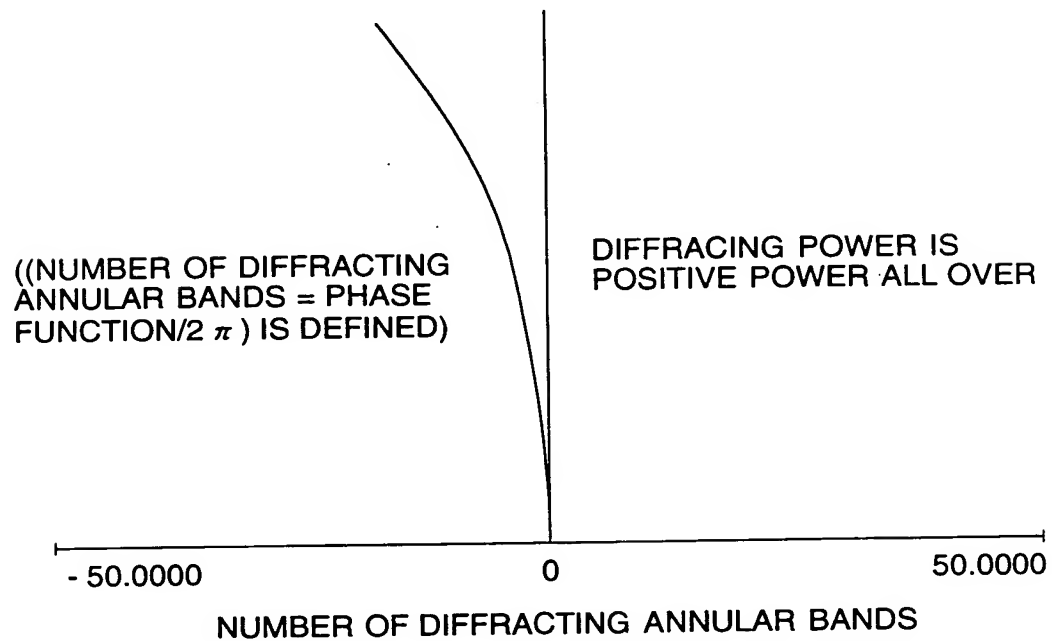


FIG. 46

RELATIONSHIP BETWEEN NUMBER OF DIFFRACTING  
ANNULAR BANDS AND HEIGHT FROM THE OPTICAL  
AXIS IN EXAMPLE 8

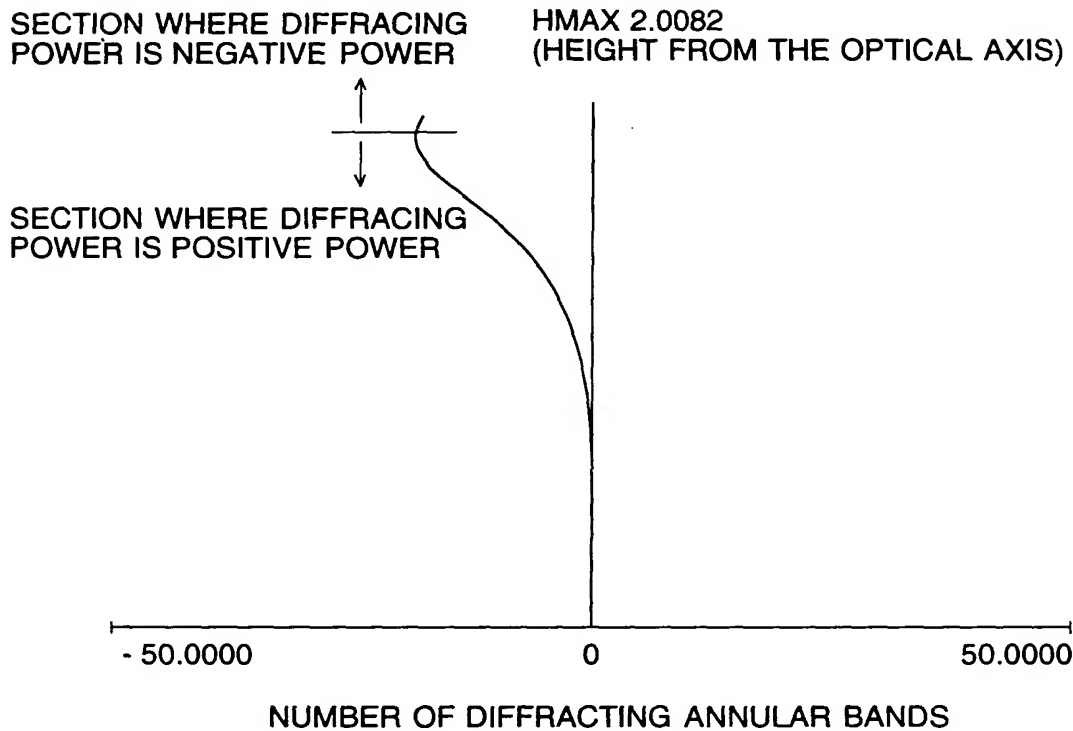


FIG. 47 (a)

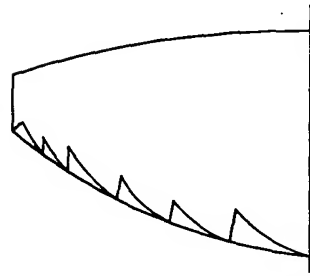


FIG. 47 (b)

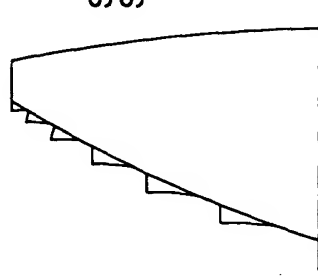


FIG. 47 (c)

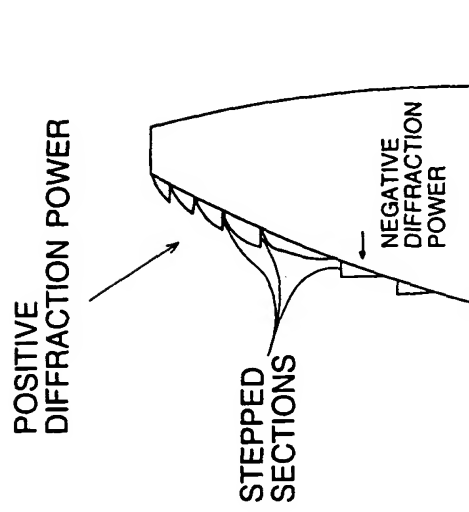
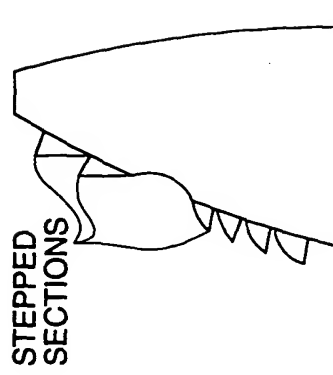


FIG. 47 (d)



POSITIVE  
DIFFRACTION  
POWER

NEGATIVE  
DIFFRACTION  
POWER

LENS IN WHICH  
DIFFRACTION POWER IS  
NEGATIVE POWER IN THE  
VICINITY OF OPTICAL AXIS  
AND IS CHANGED TO  
POSITIVE POWER FROM  
MIDDLE POINT

LENS IN WHICH DIFFRACTION  
POWER IS POSITIVE POWER  
IN THE VICINITY OF OPTICAL  
AXIS AND IS CHANGED TO  
NEGATIVE POWER FROM  
MIDDLE POINT

RELATIONSHIP BETWEEN DIFFRACTION POWER AND ACTUAL SHAPE

FIG. 48

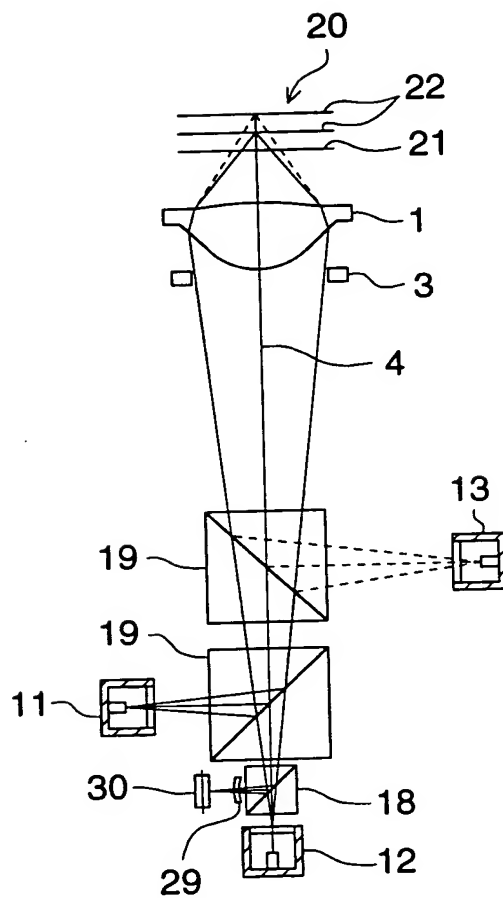


FIG. 49

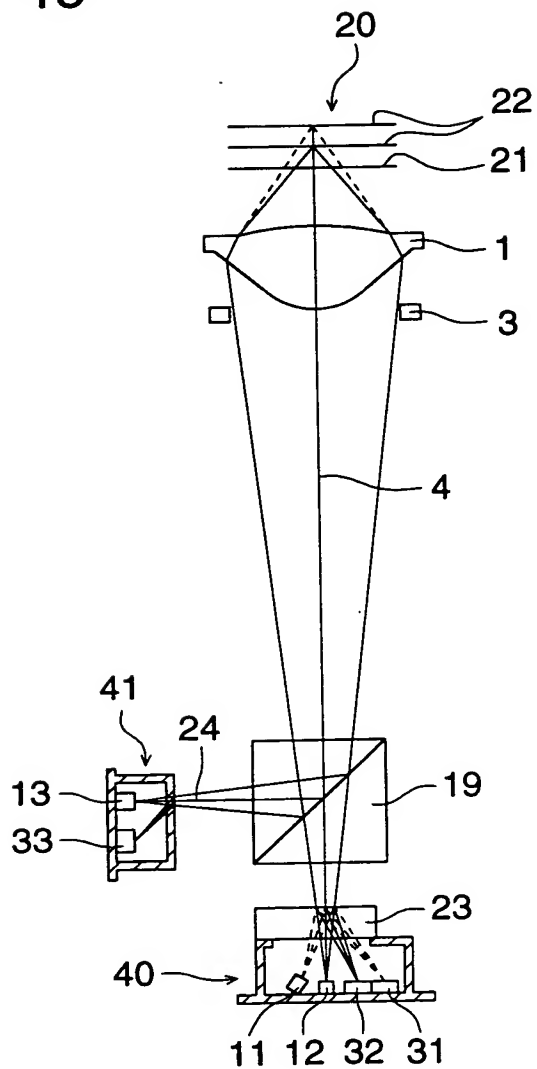


FIG. 50

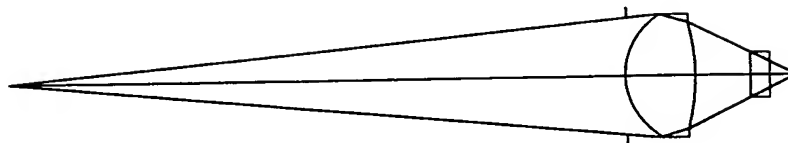


FIG. 51

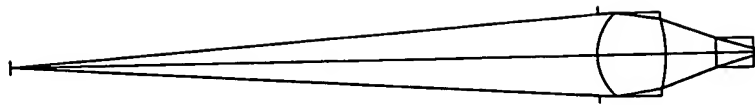


FIG. 52

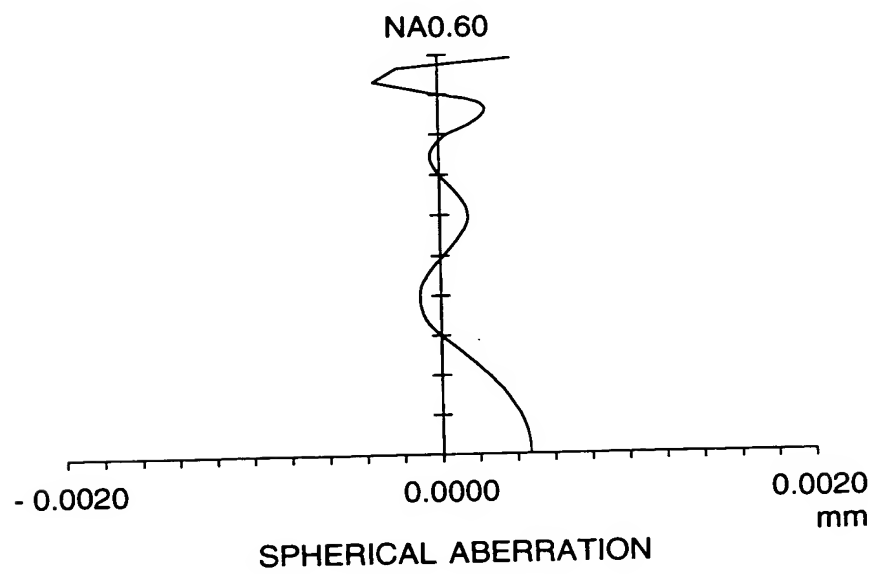


FIG. 53

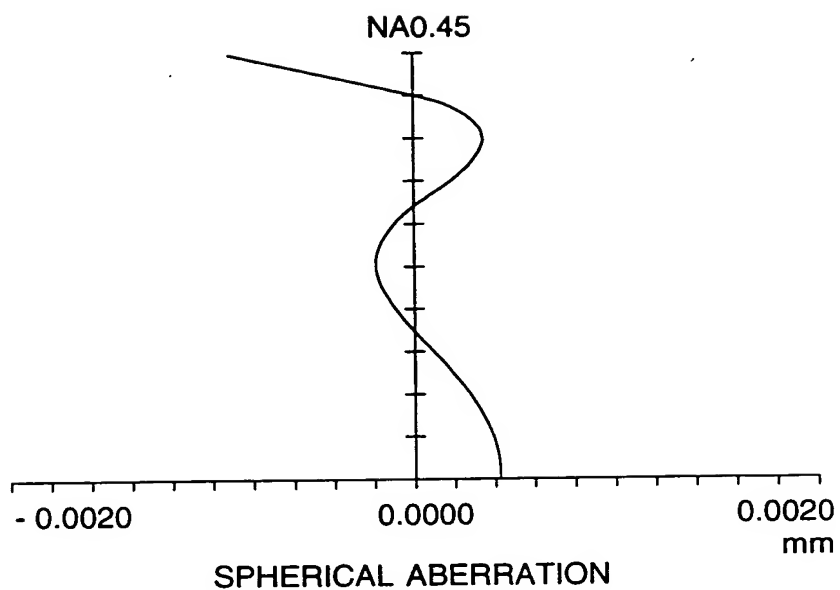


FIG. 54

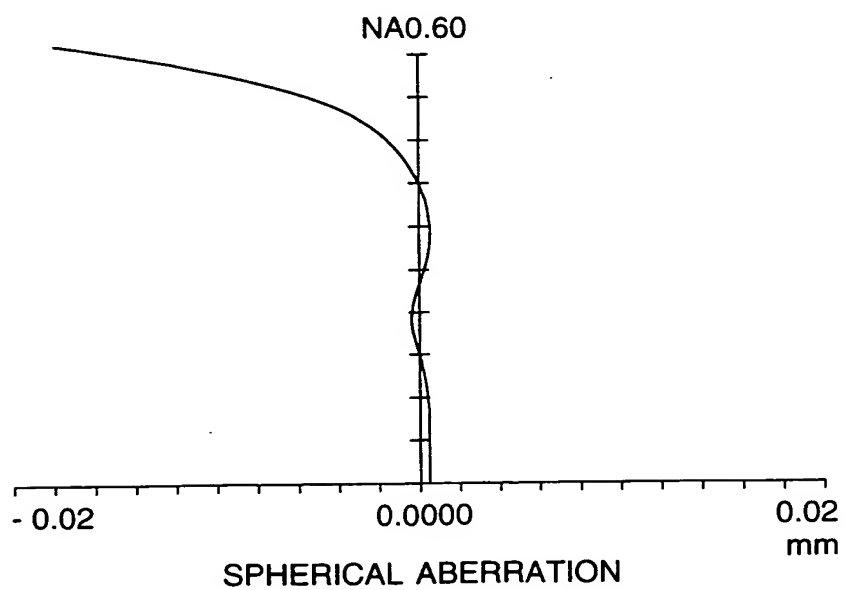


FIG. 55

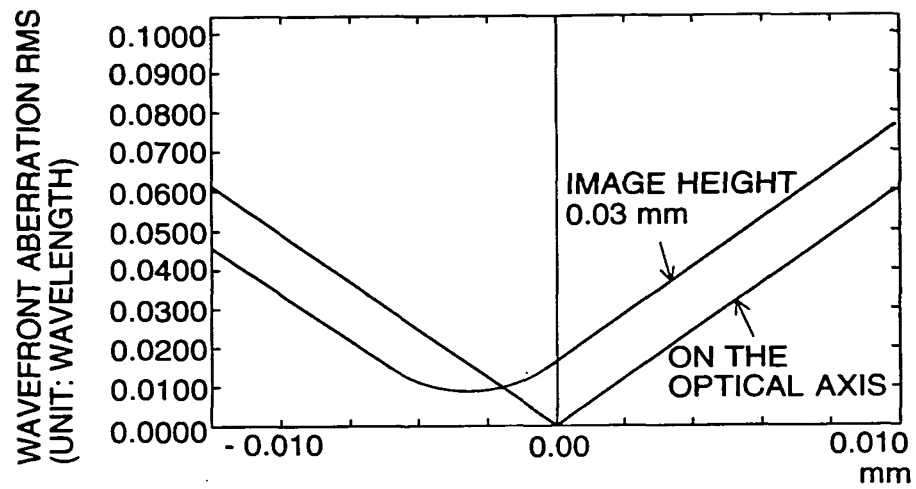


FIG. 56

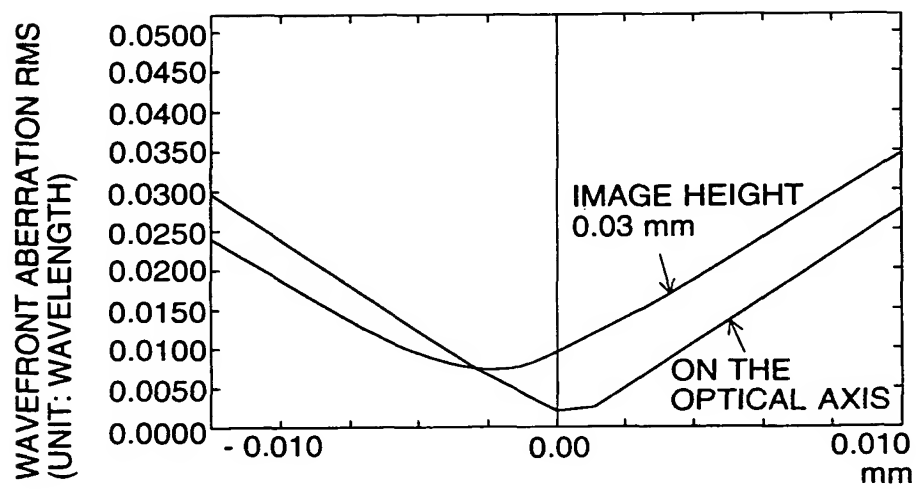


FIG. 57

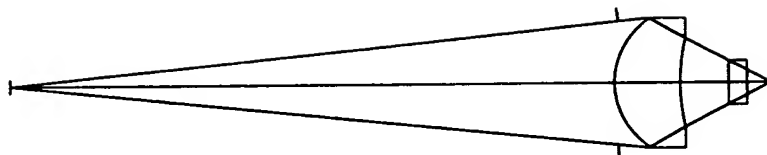


FIG. 58

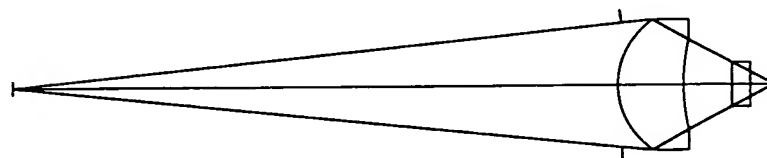


FIG. 59

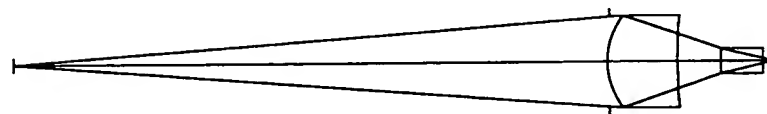


FIG. 60

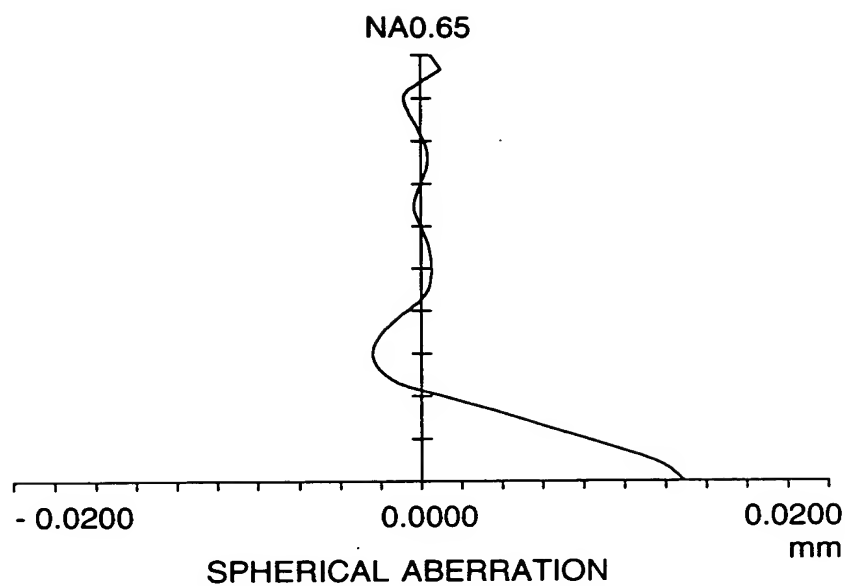


FIG. 61

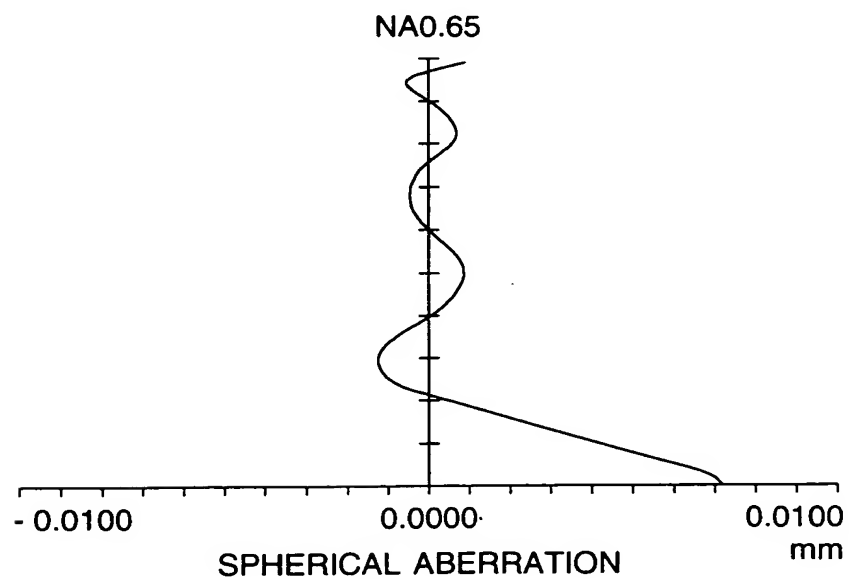


FIG. 62

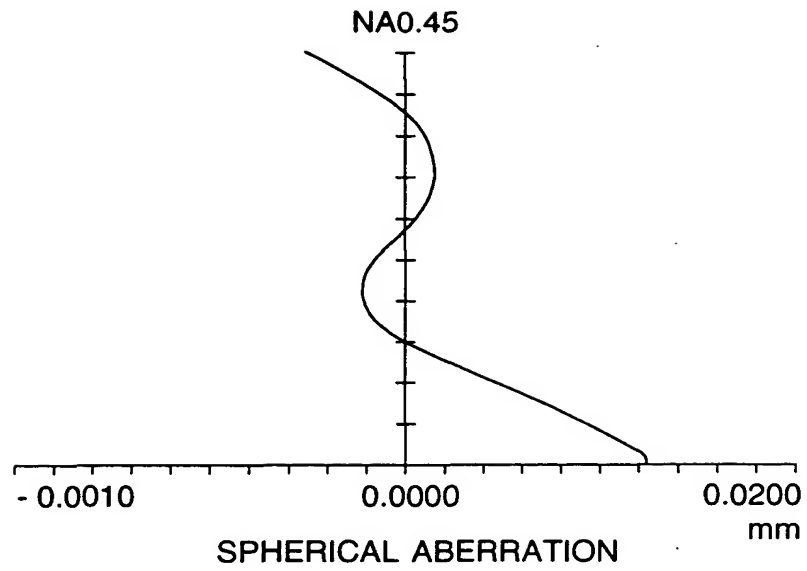


FIG. 63

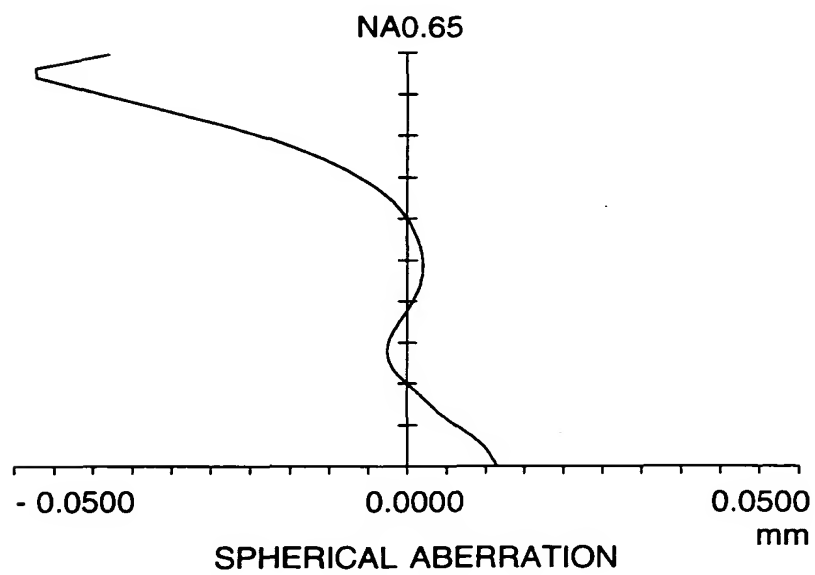


FIG. 64

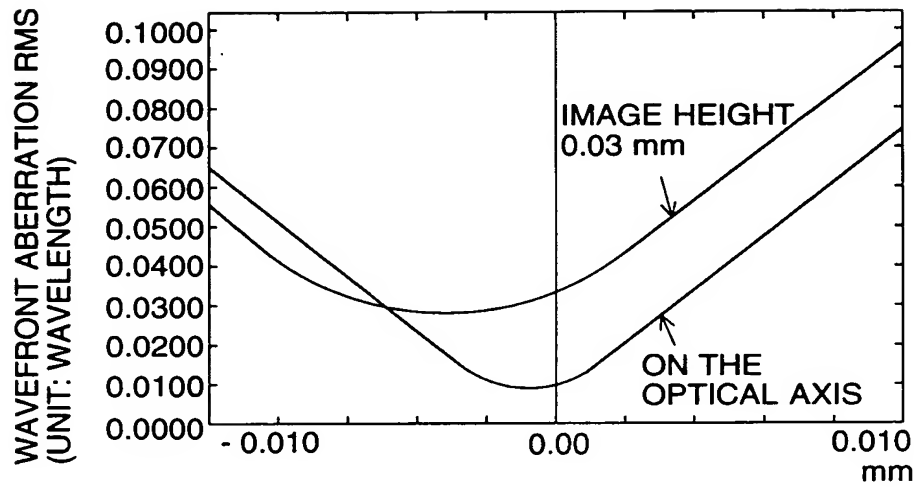


FIG. 65

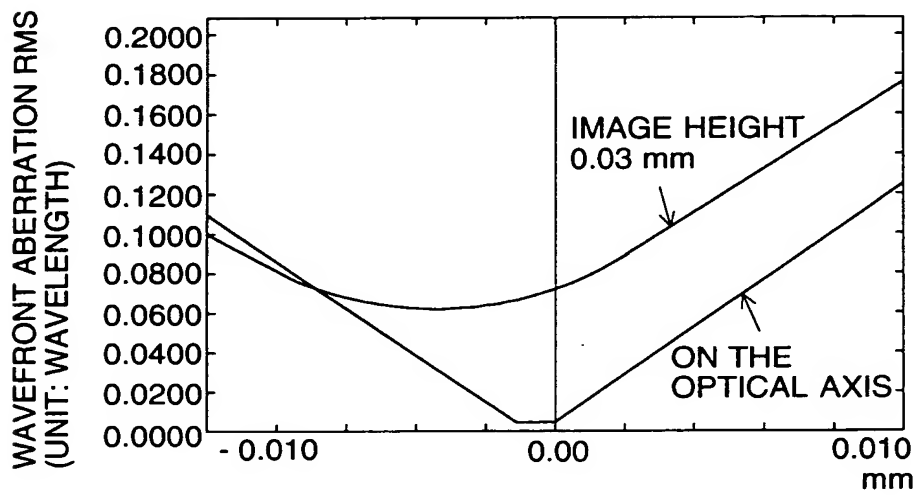


FIG. 66

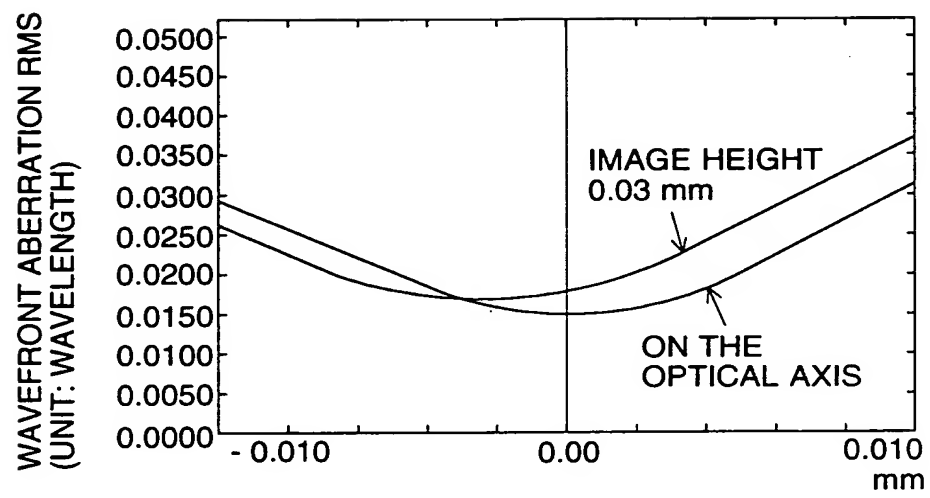


FIG. 67

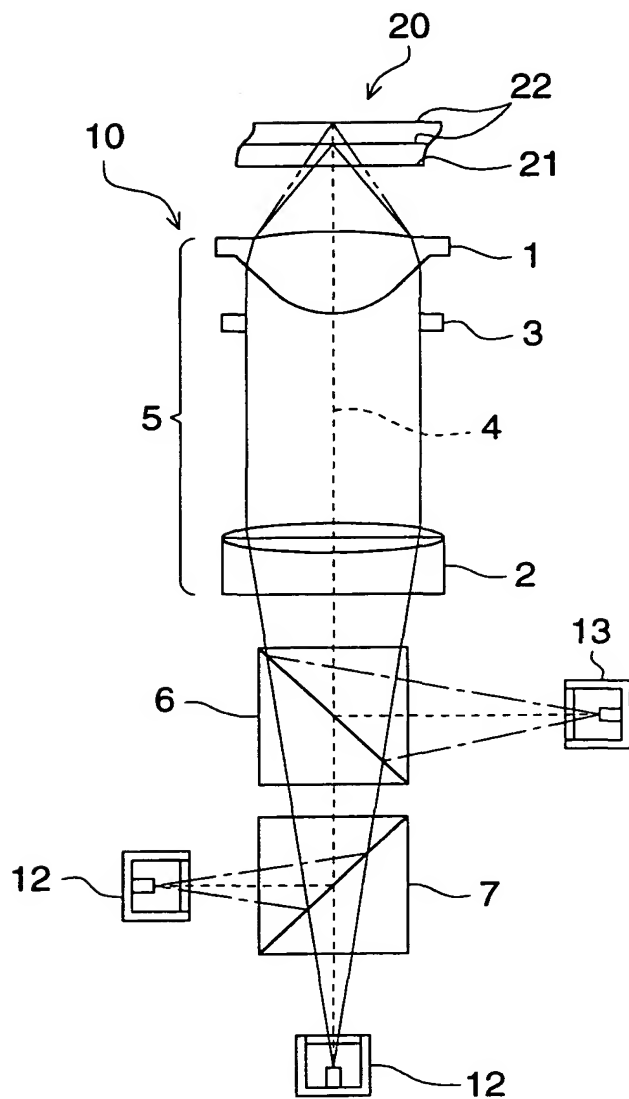


FIG. 68

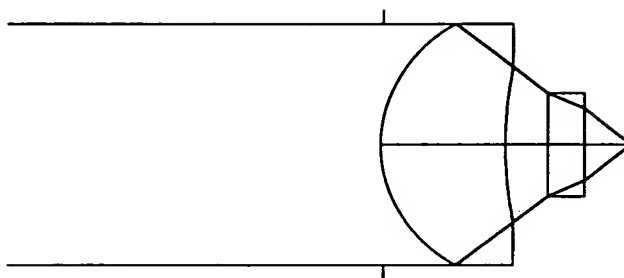


FIG. 69

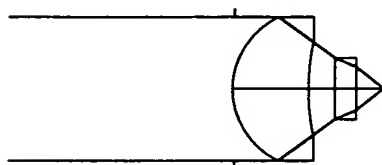


FIG. 70

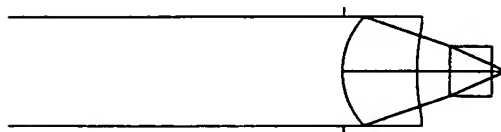


FIG. 71

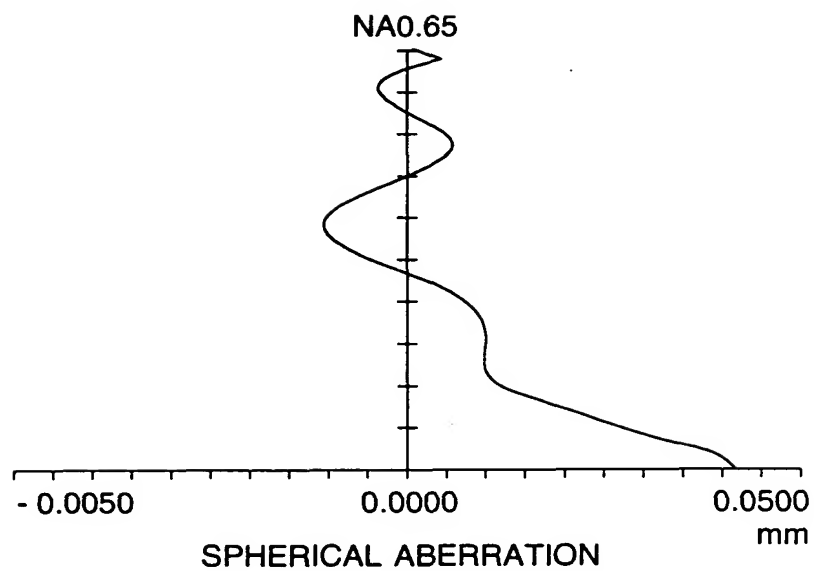


FIG. 72

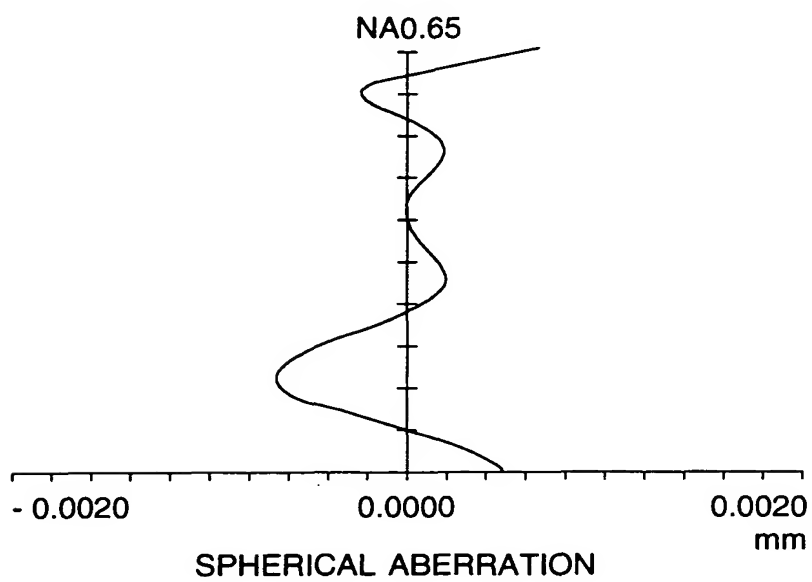


FIG. 73

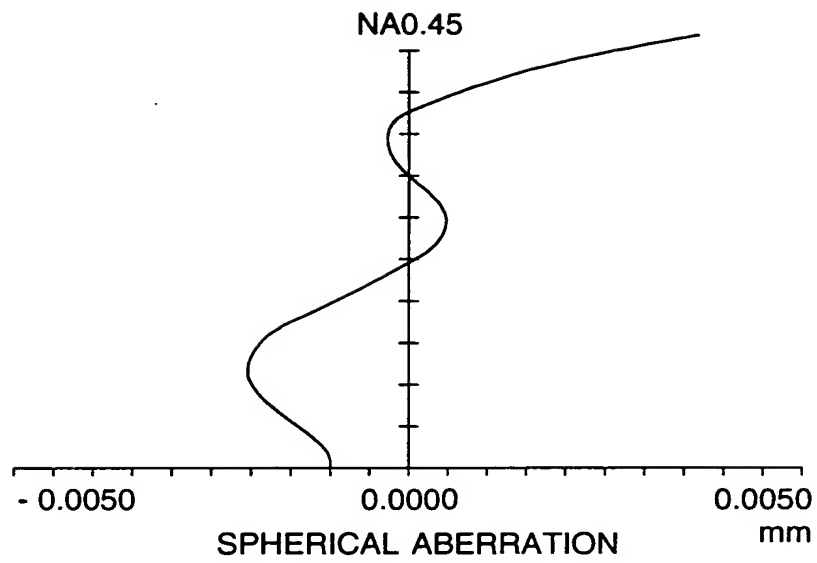


FIG. 74

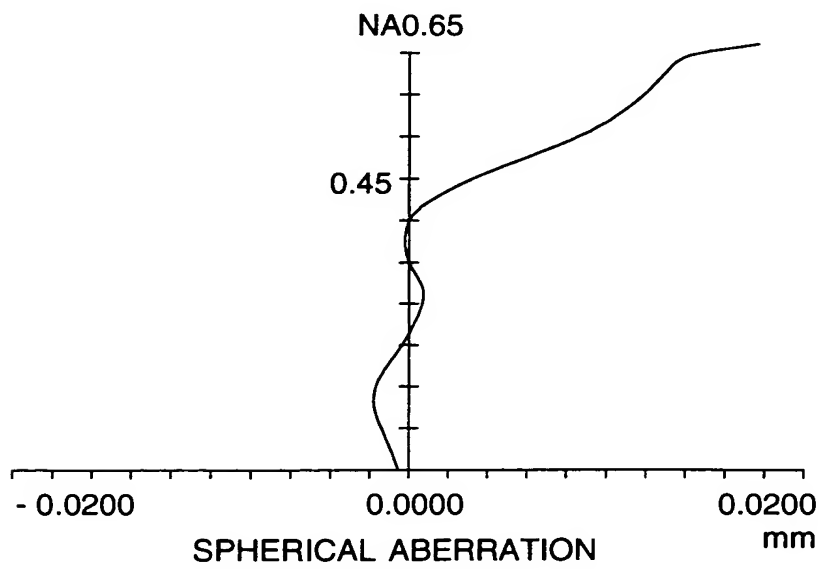


FIG. 75

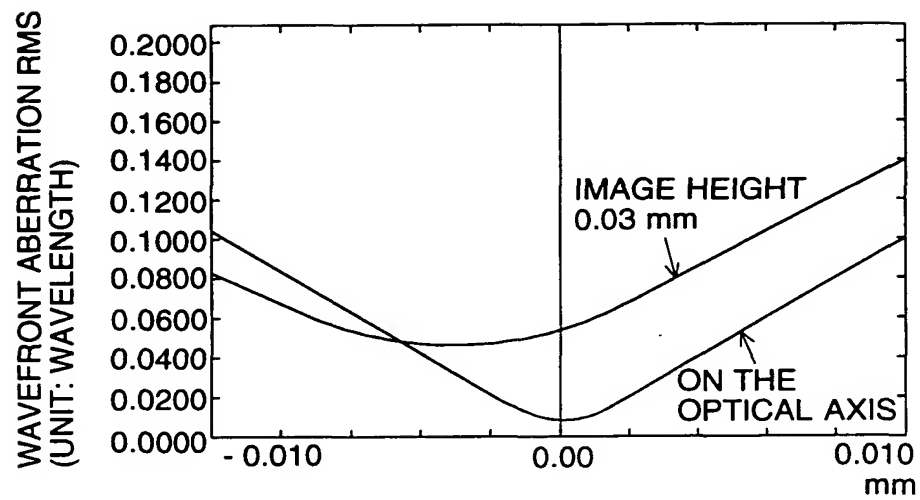


FIG. 76

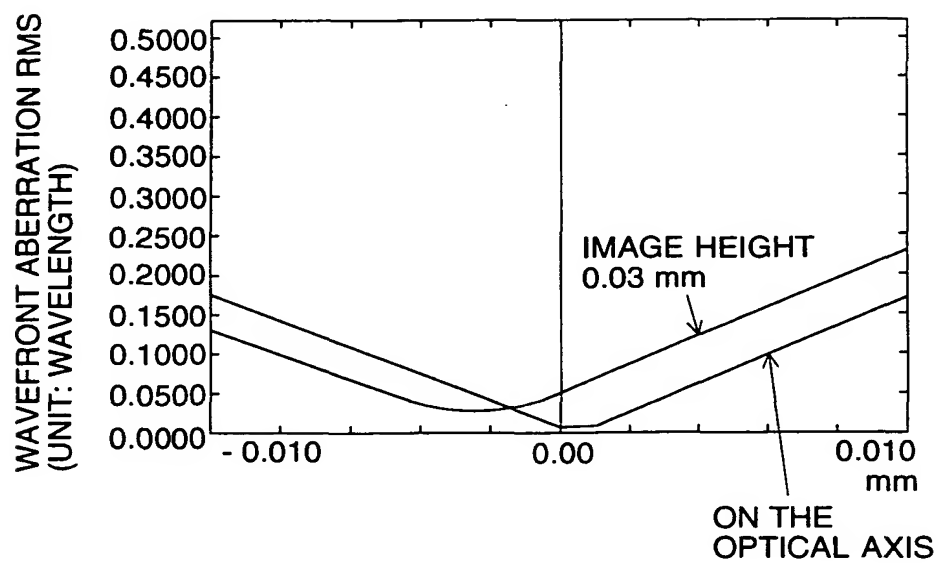


FIG. 77

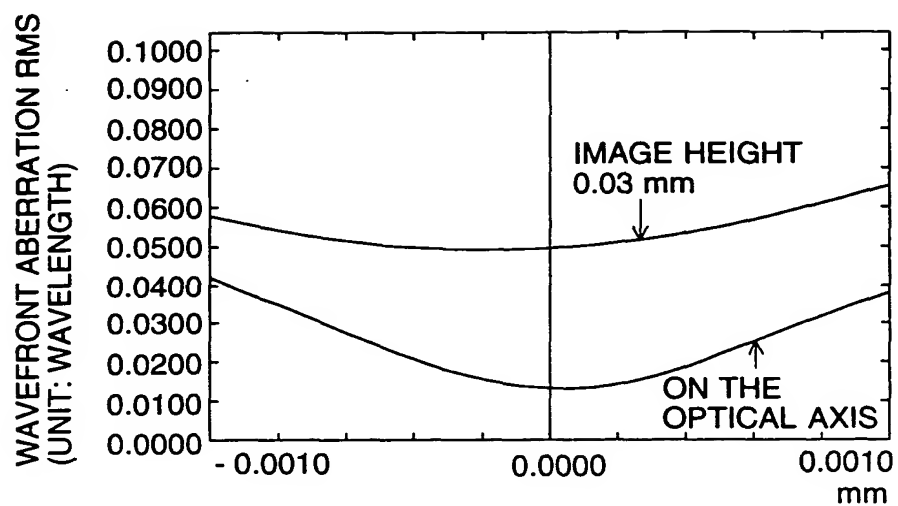


FIG. 78

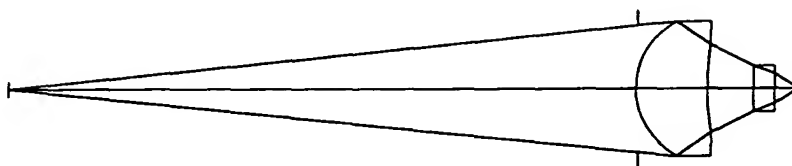


FIG. 79

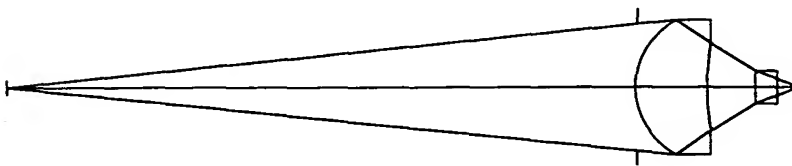


FIG. 80

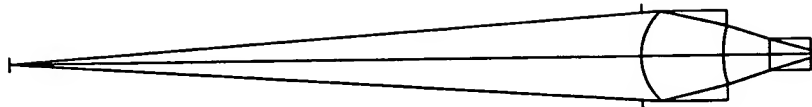


FIG. 81

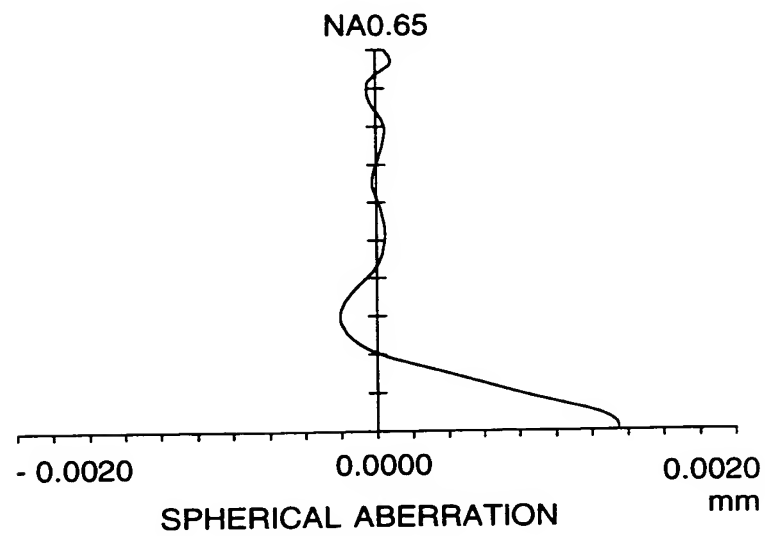


FIG. 82

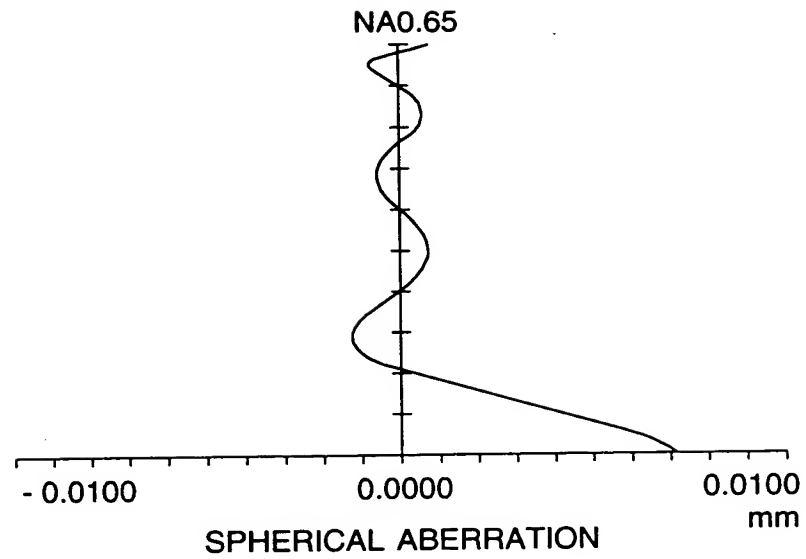


FIG. 83

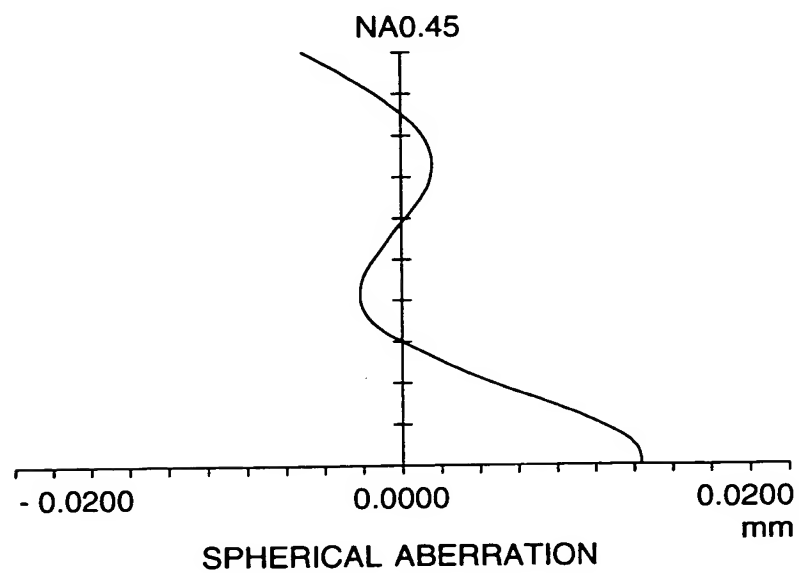


FIG. 84

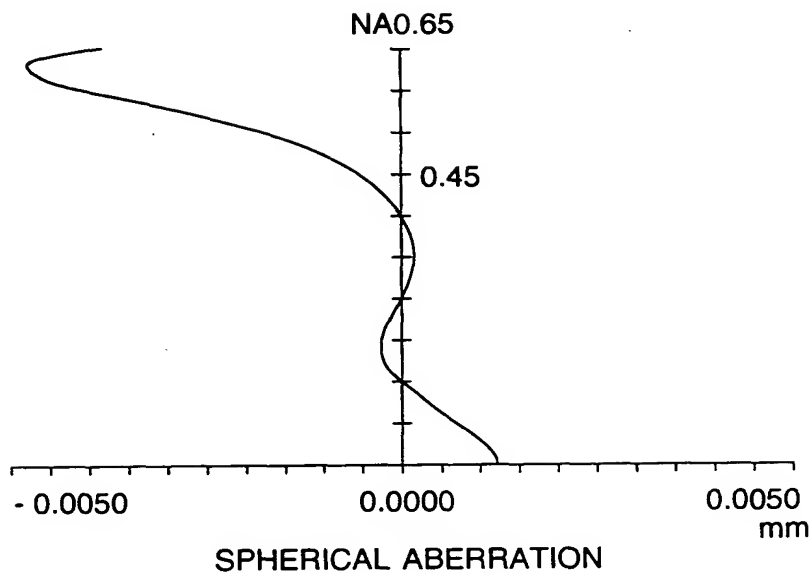


FIG. 85

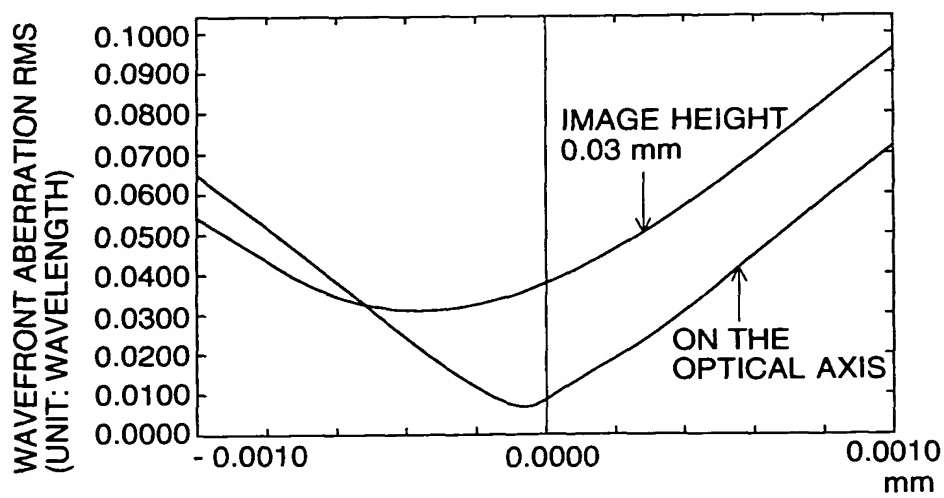


FIG. 86

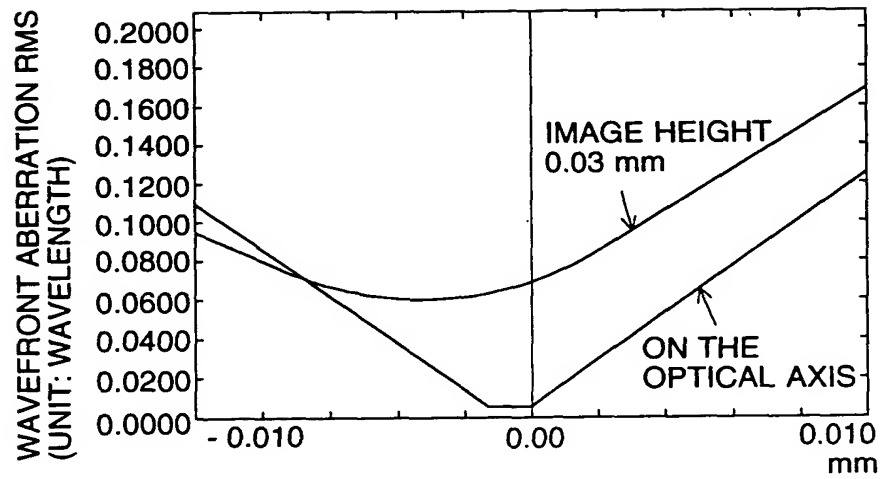


FIG. 87

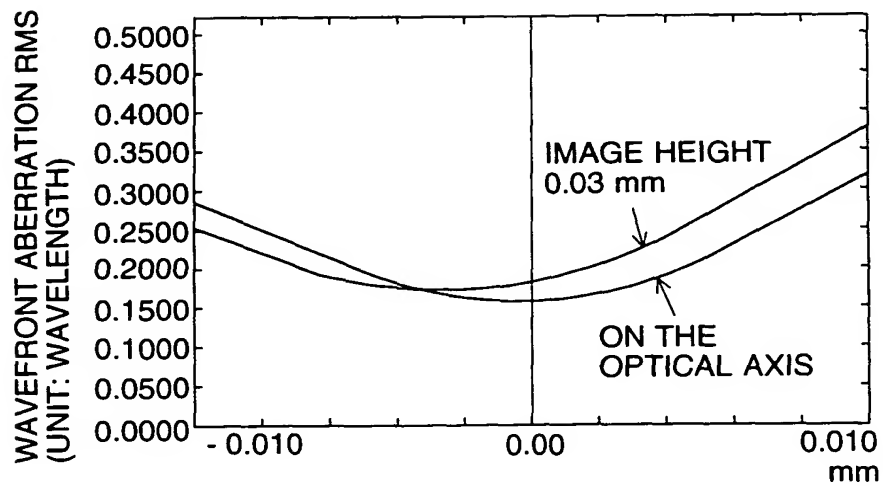


FIG. 88

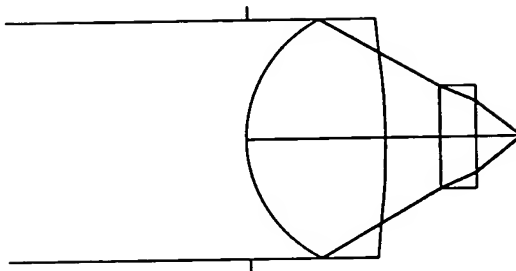


FIG. 89

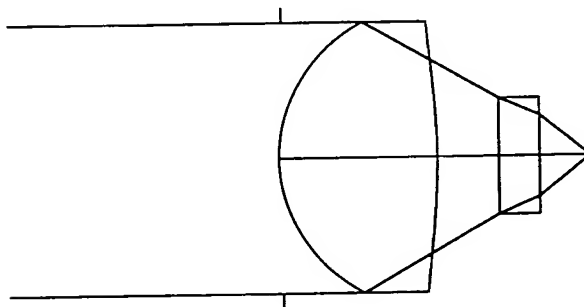


FIG. 90

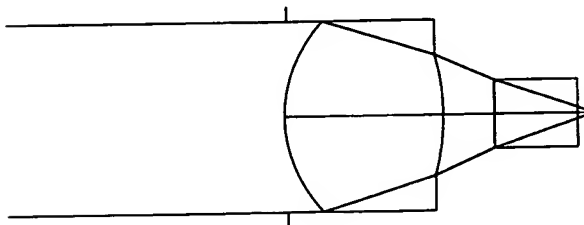


FIG. 91

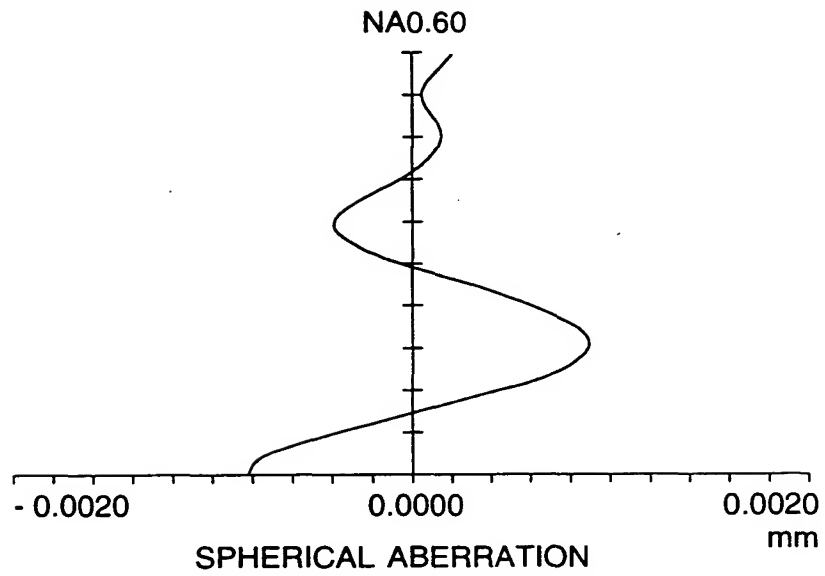


FIG. 92

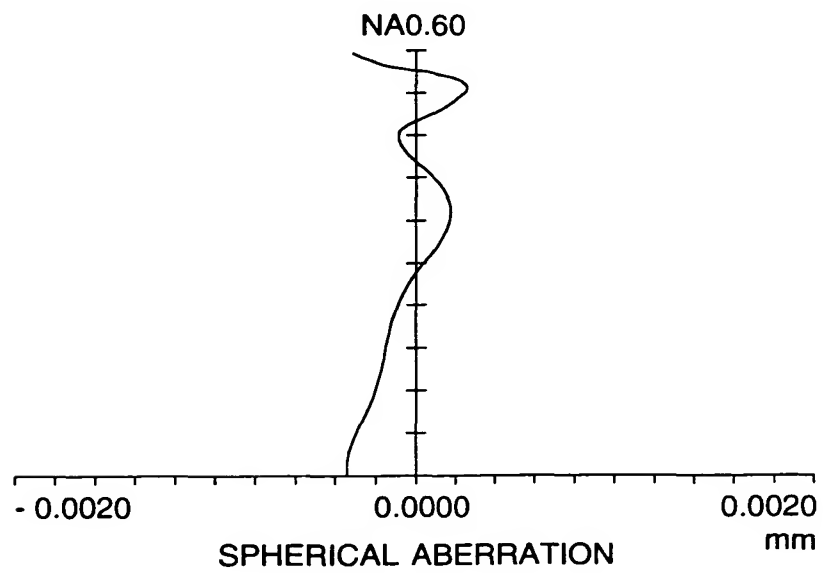


FIG. 93

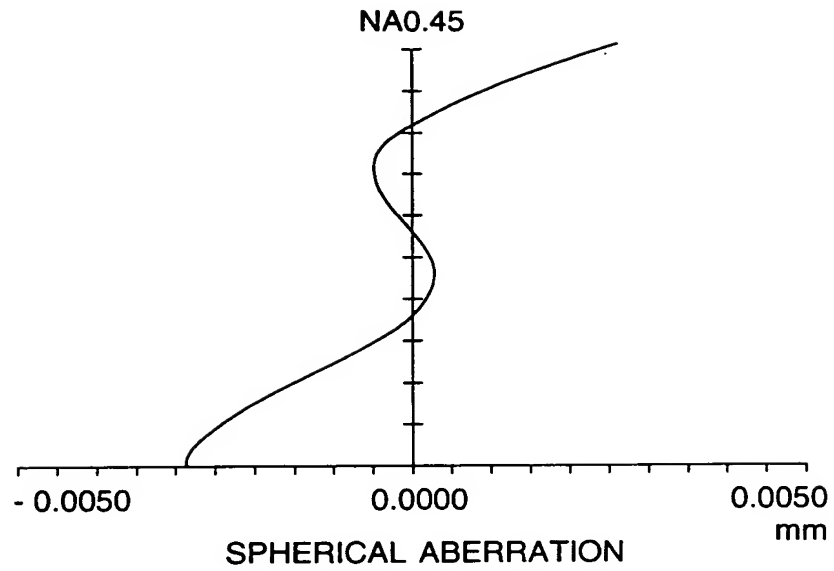


FIG. 94

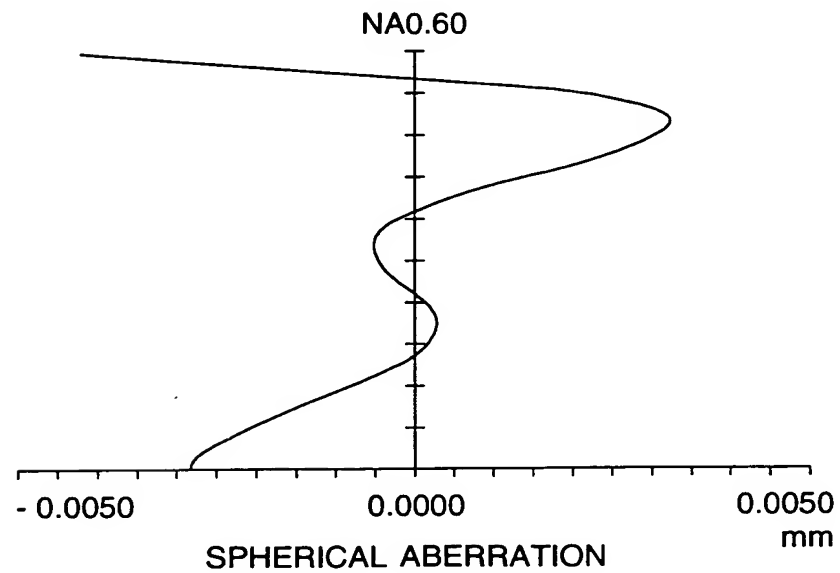


FIG. 95

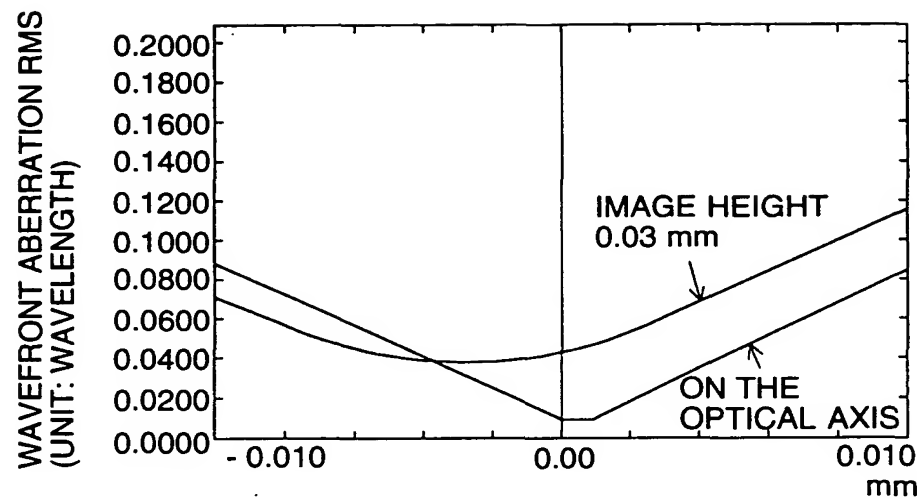


FIG. 96

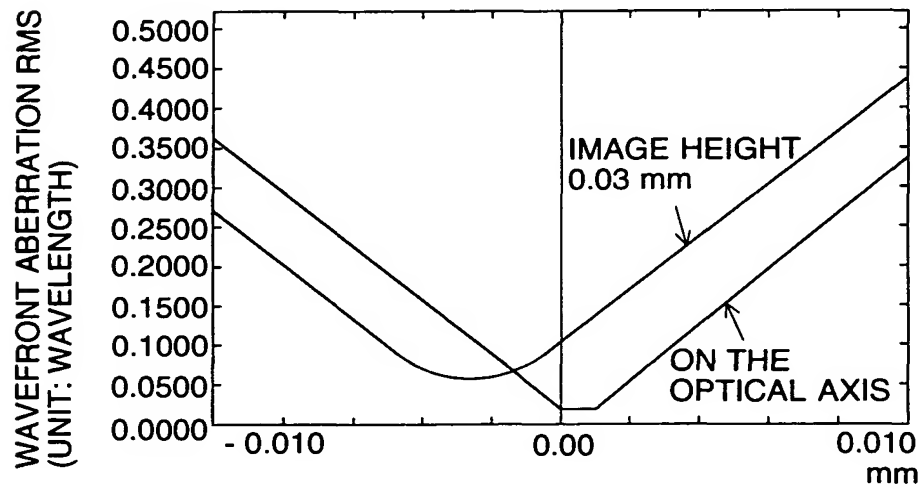


FIG. 97

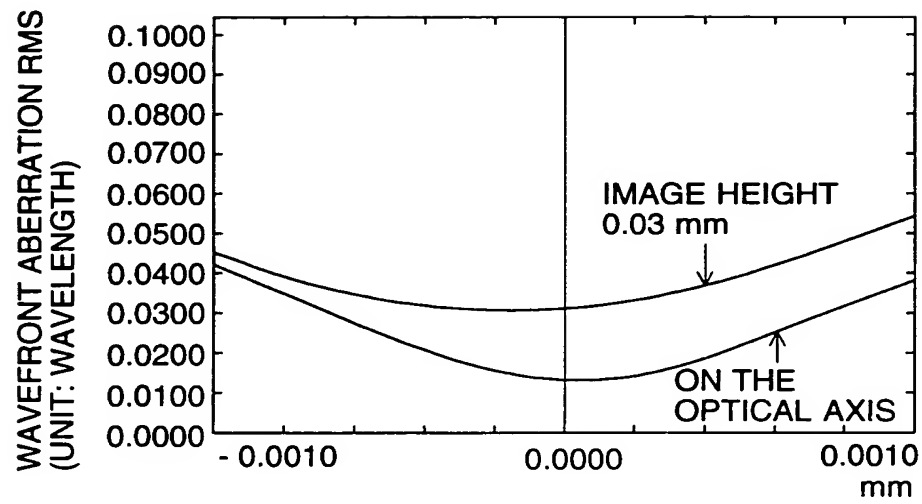
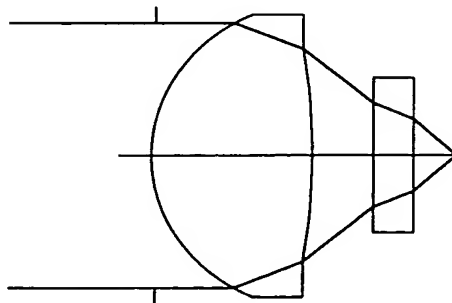


FIG. 98



CROSS SECTIONAL VIEW OF OBJECTIVE LENS AND ILLUSTRATION  
 SHOWING OPTICAL PATH FOR WAVELENGTH  $\lambda = 400\text{nm}$

FIG. 99

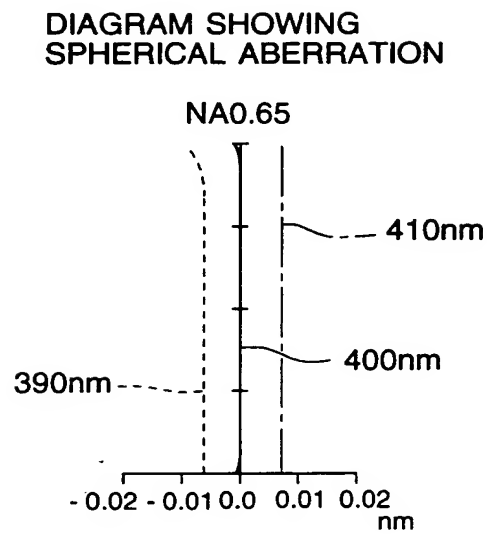


FIG. 100

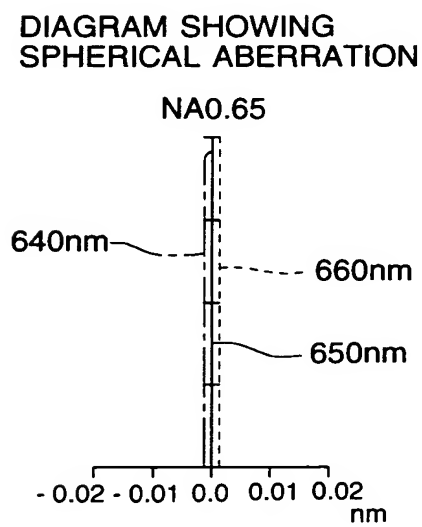


FIG. 101

DIAGRAM SHOWING  
SPHERICAL ABERRATION

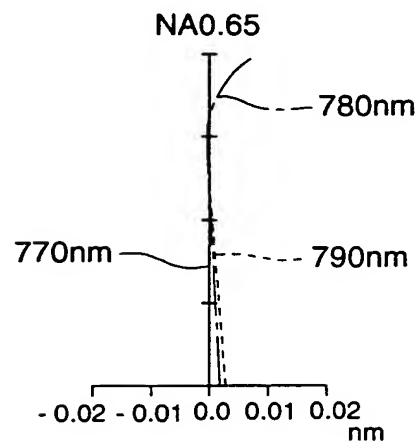


FIG. 102

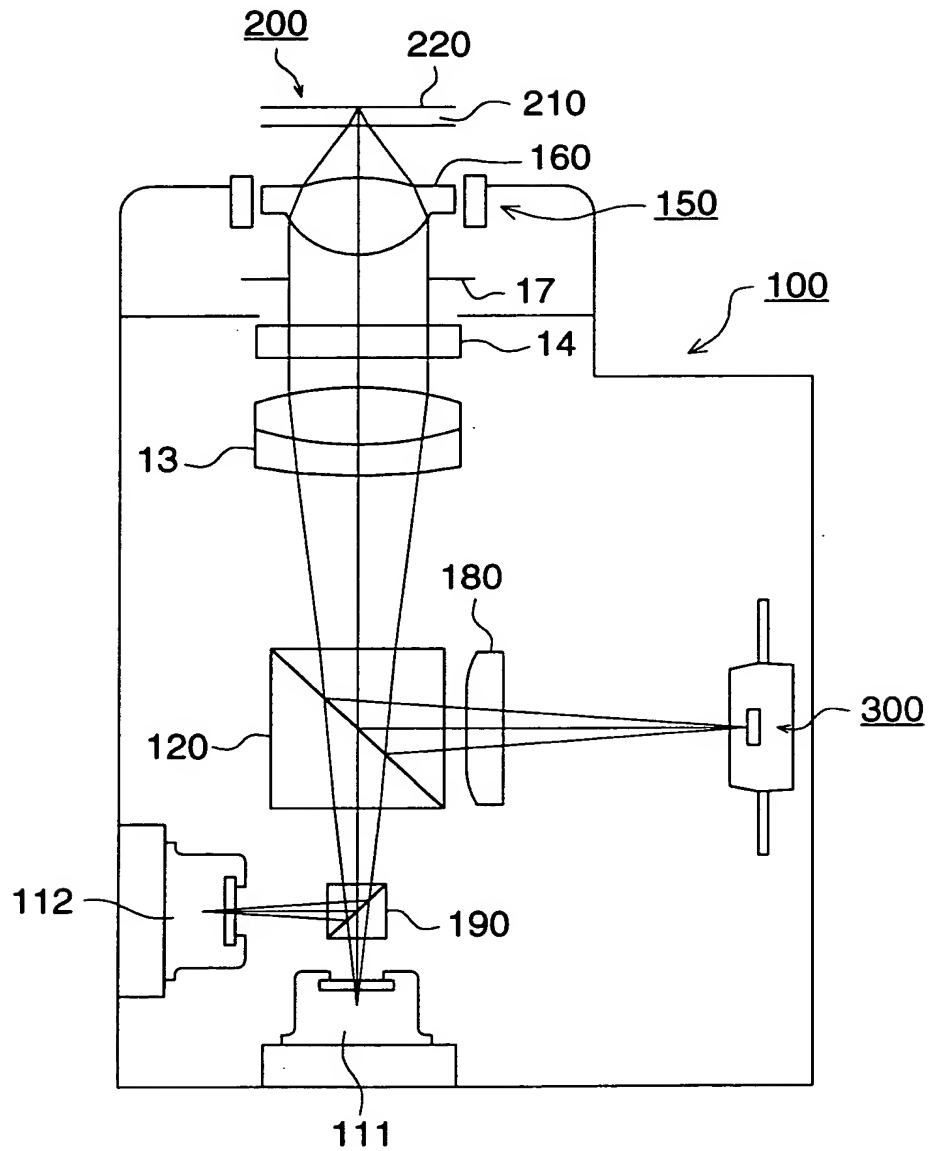


FIG. 103

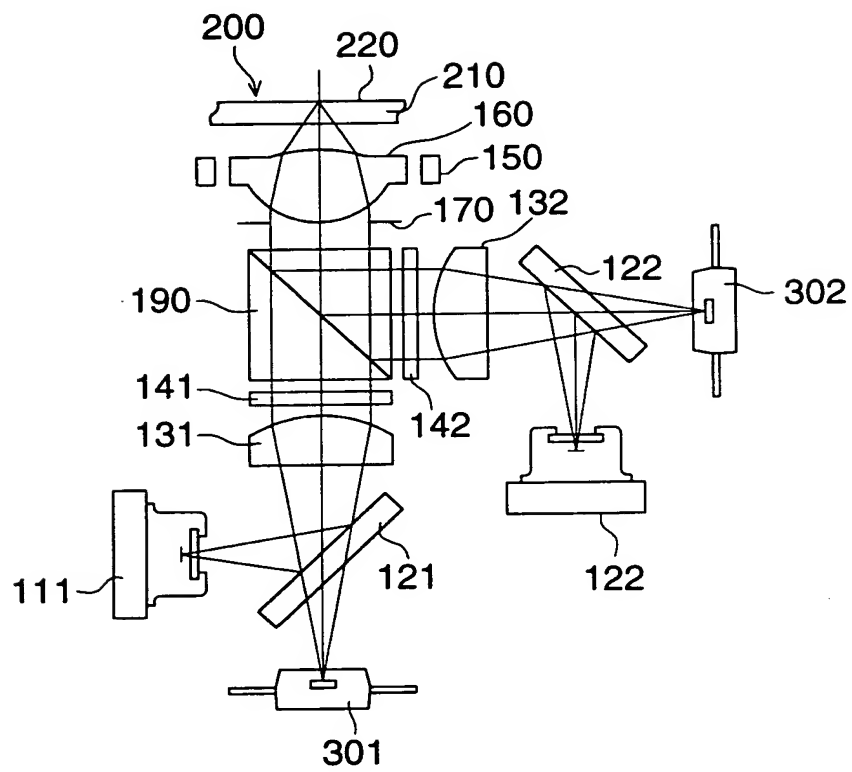


FIG. 104

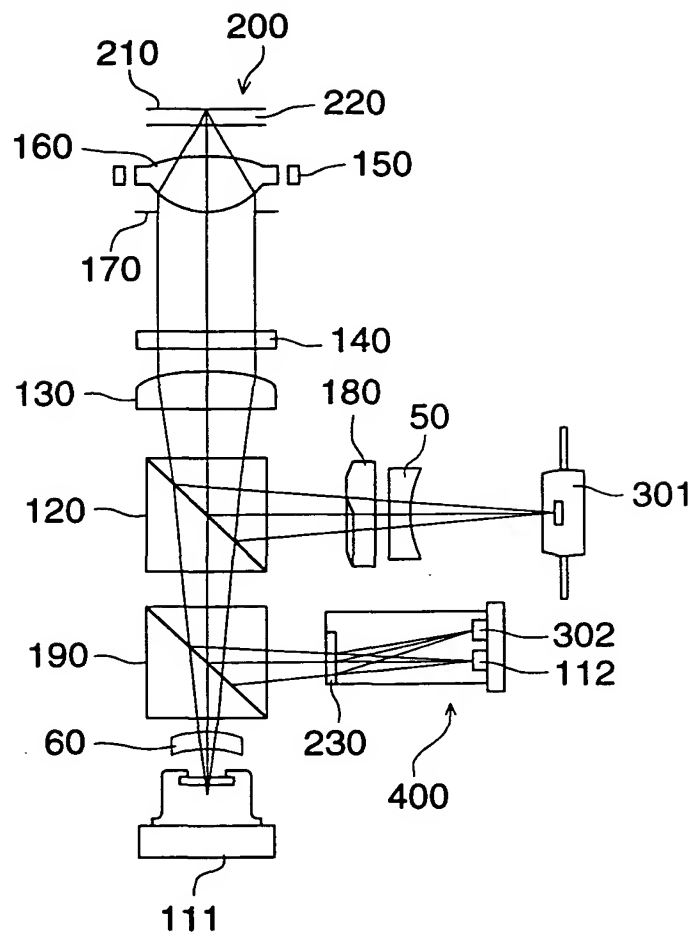


FIG. 105

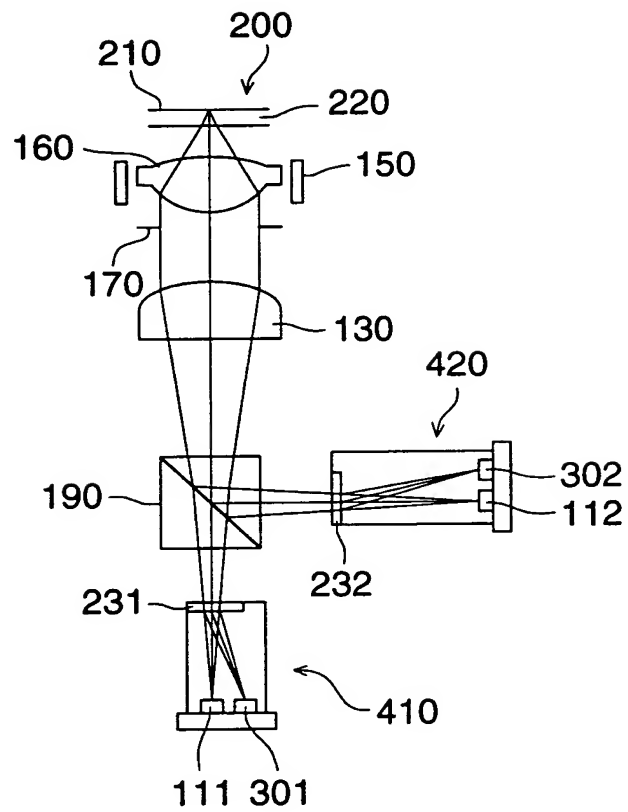


FIG. 106

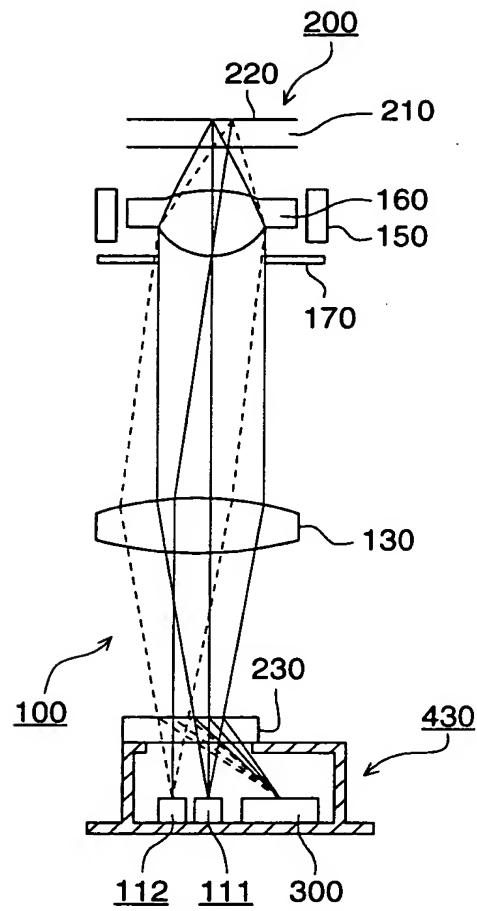


FIG. 107

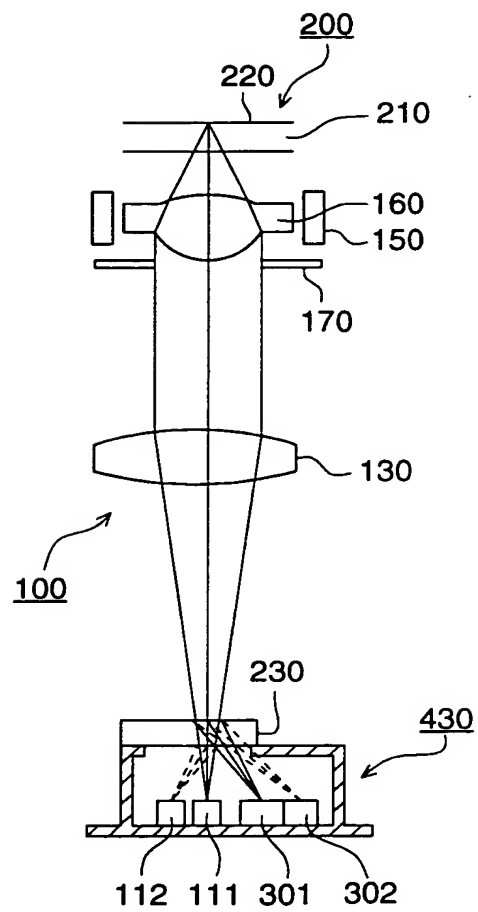


FIG. 108

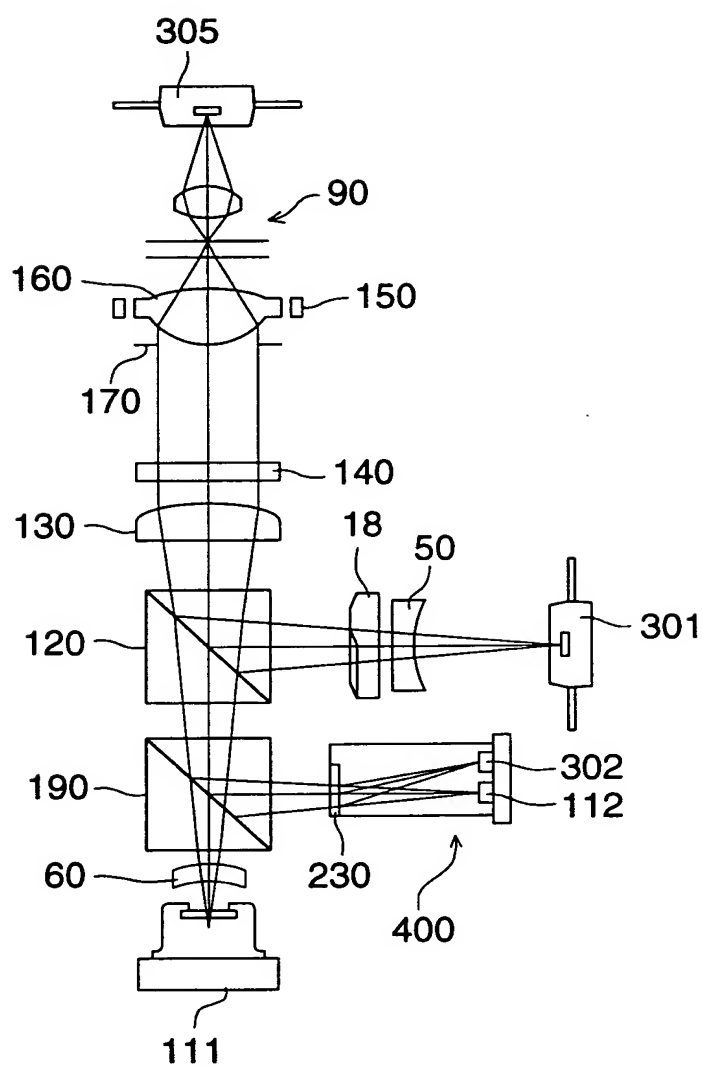


FIG. 109

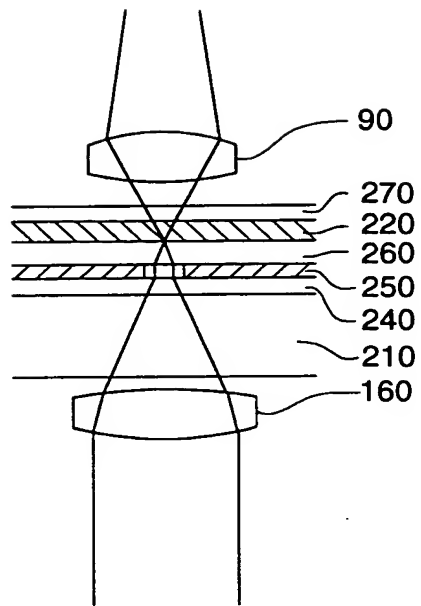


FIG. 110

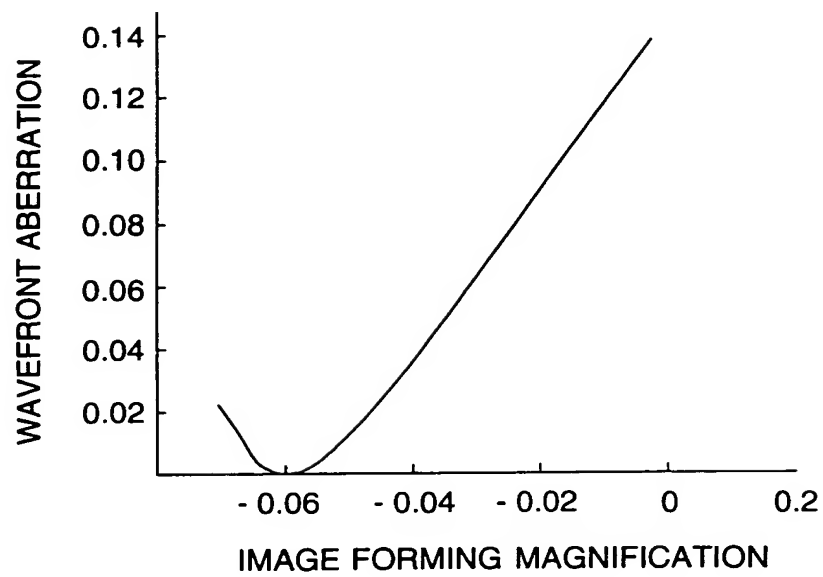


FIG. 111

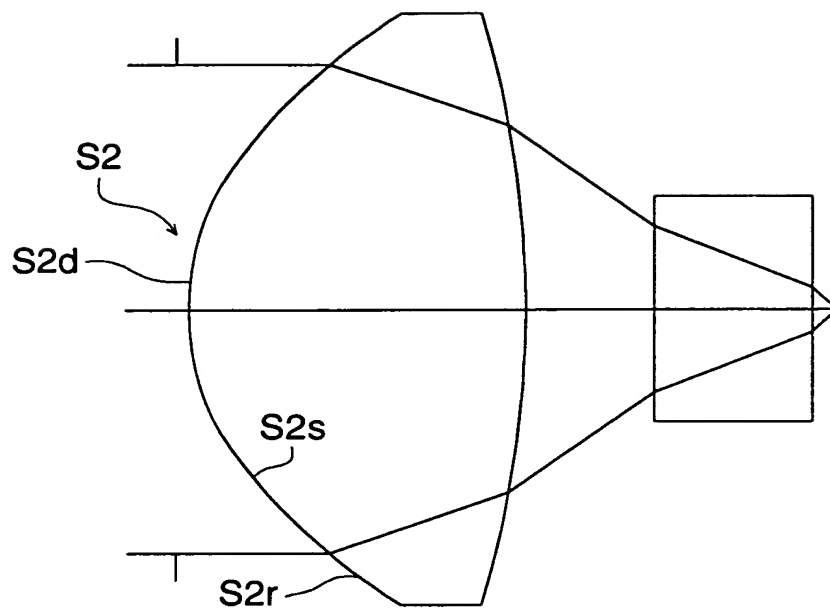


FIG. 112 (a)

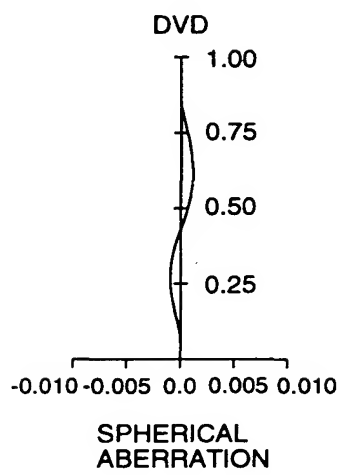


FIG. 112 (b)

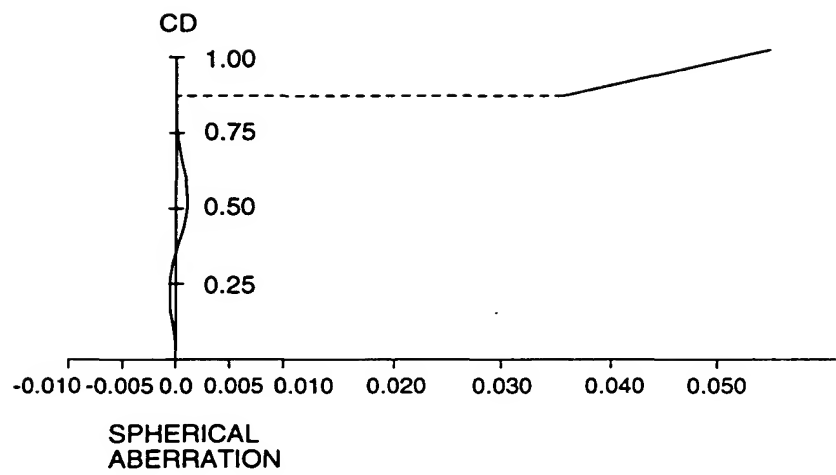


FIG. 113 (a)

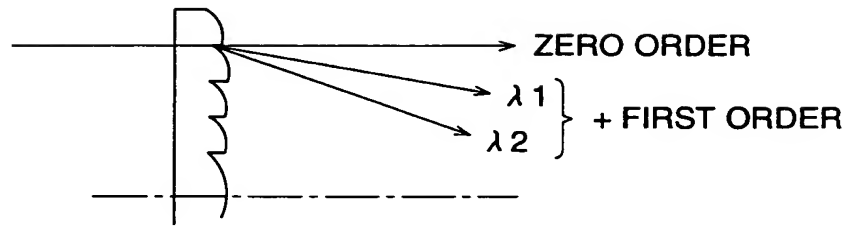


FIG. 113 (b)

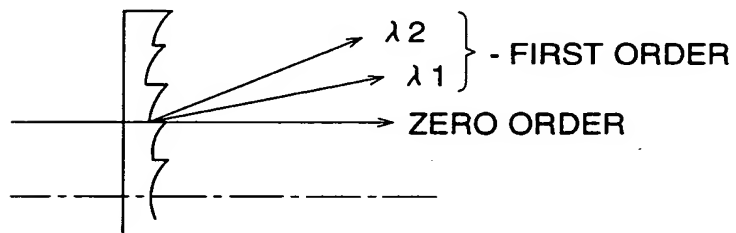


FIG. 114

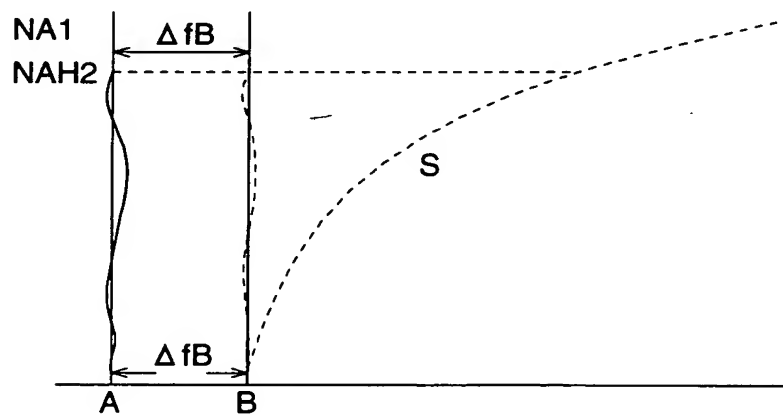


FIG. 115 (a) FIG. 115 (b)

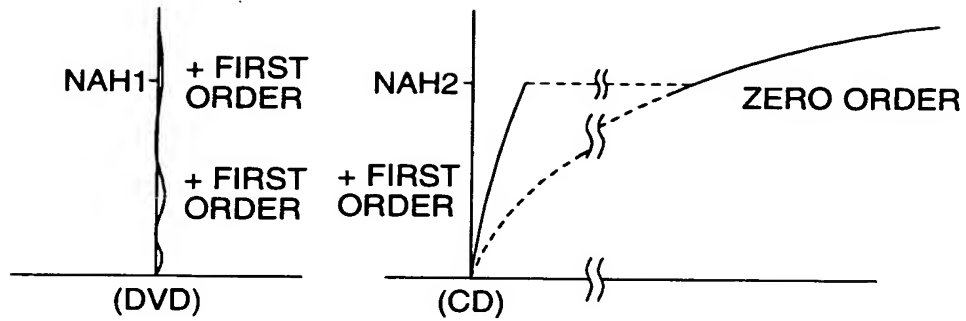


FIG. 116 (a) FIG. 116 (b)

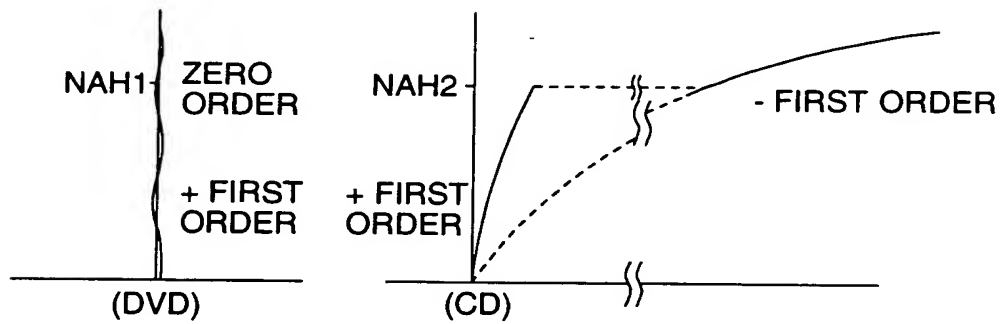


FIG. 117

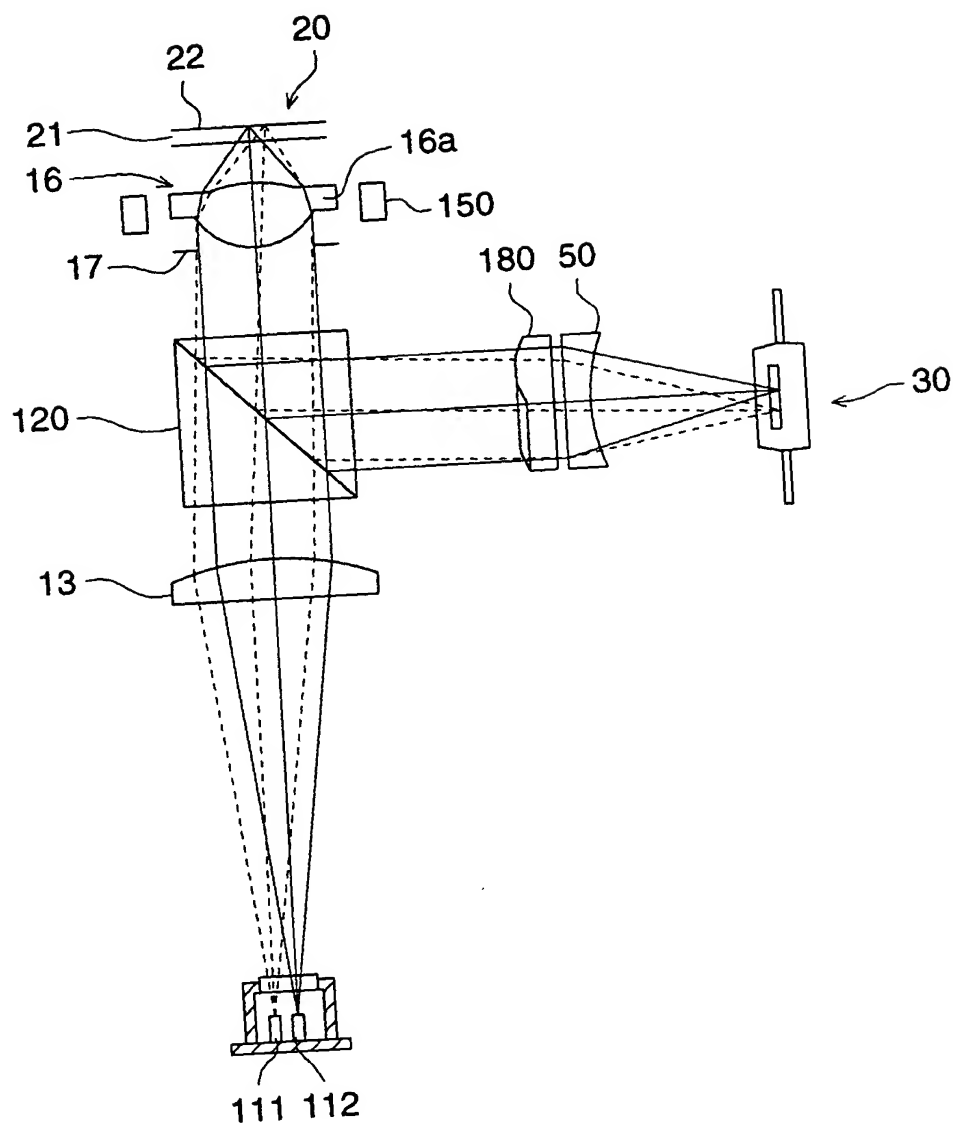


FIG. 118

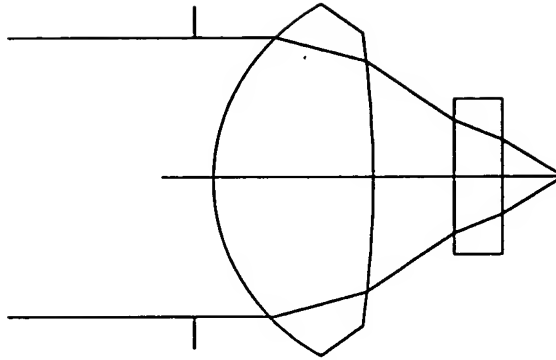


FIG. 119

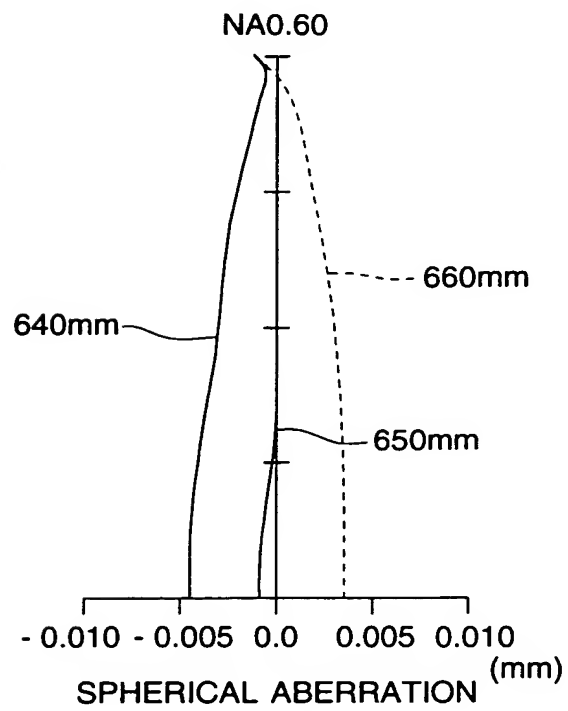


FIG. 120

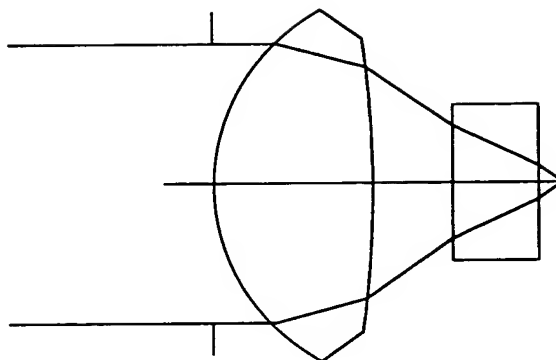


FIG. 121

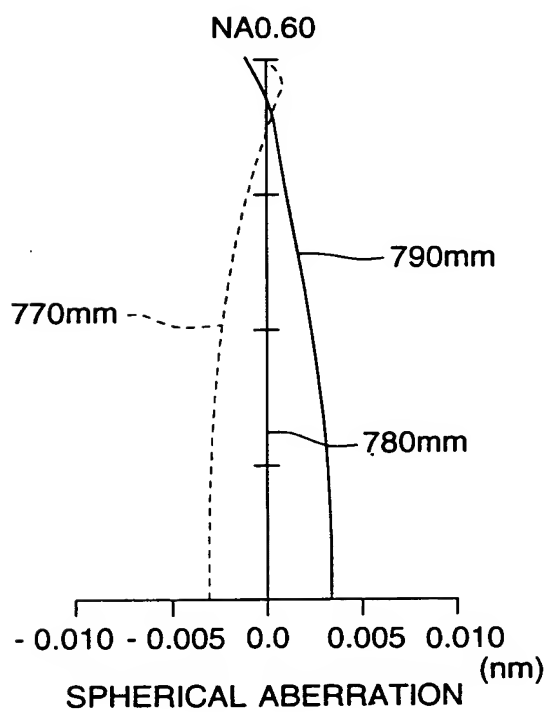


FIG. 122

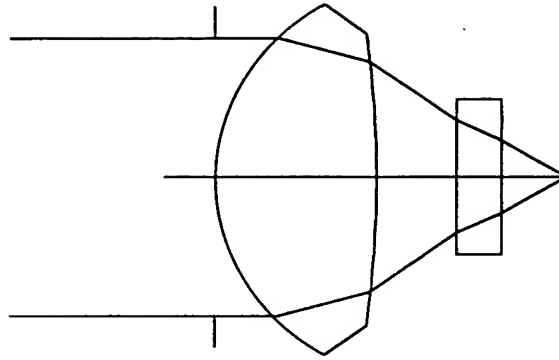


FIG. 123

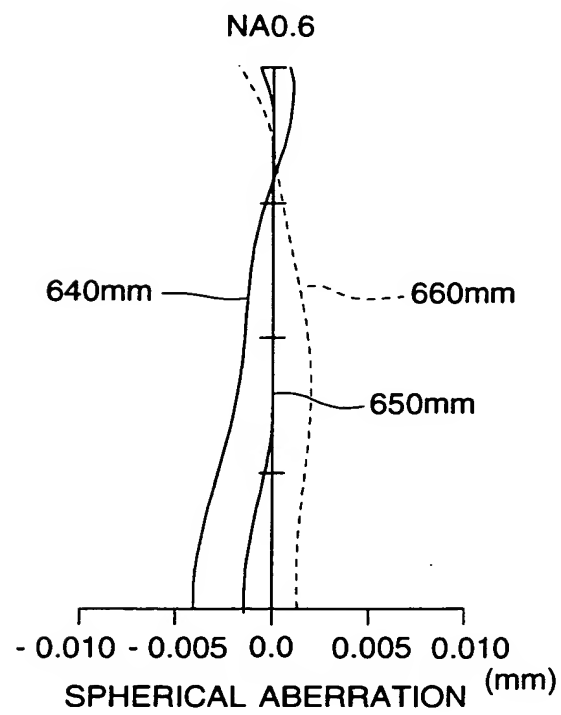


FIG. 124

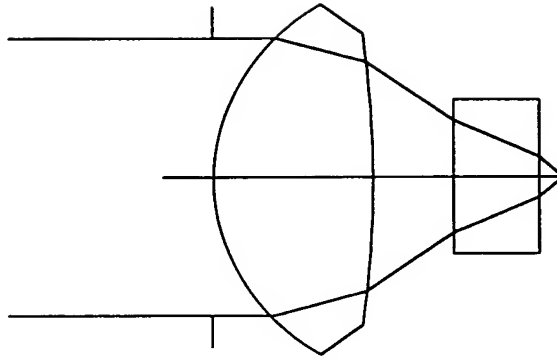


FIG. 125

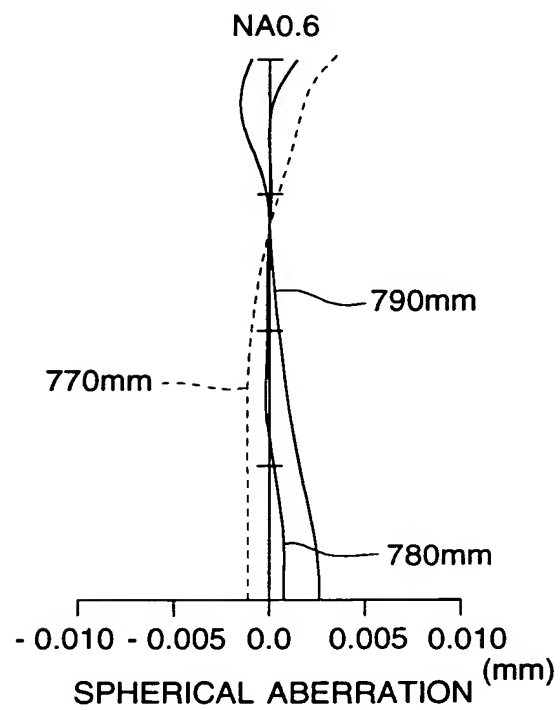


FIG. 126

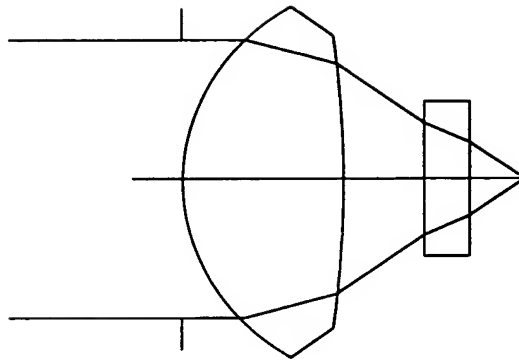


FIG. 127

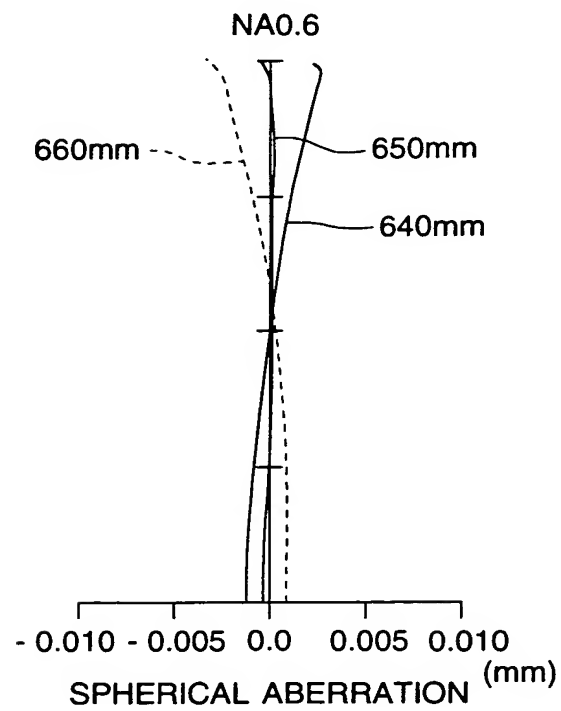


FIG. 128

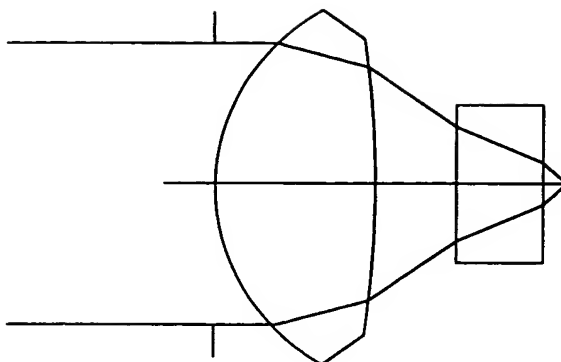


FIG. 129

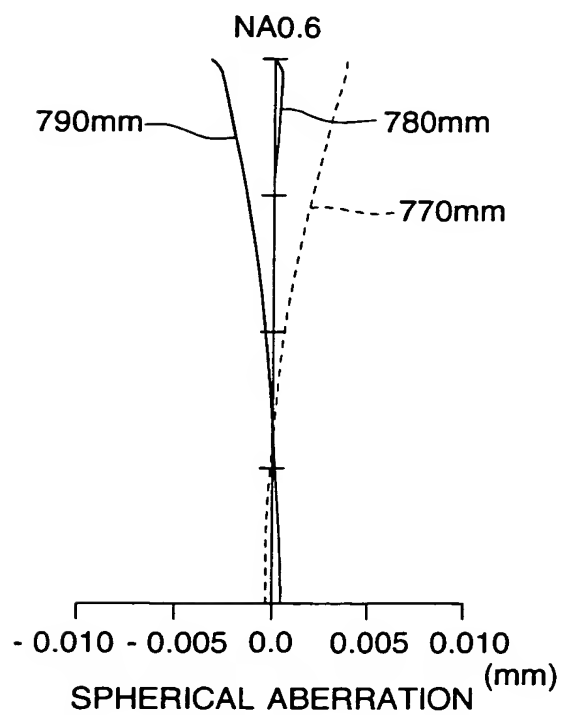


FIG. 130

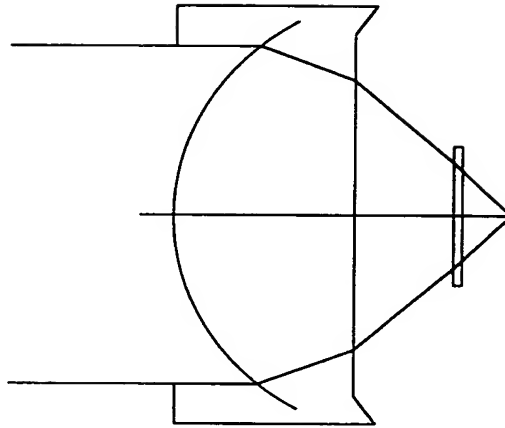


FIG. 131

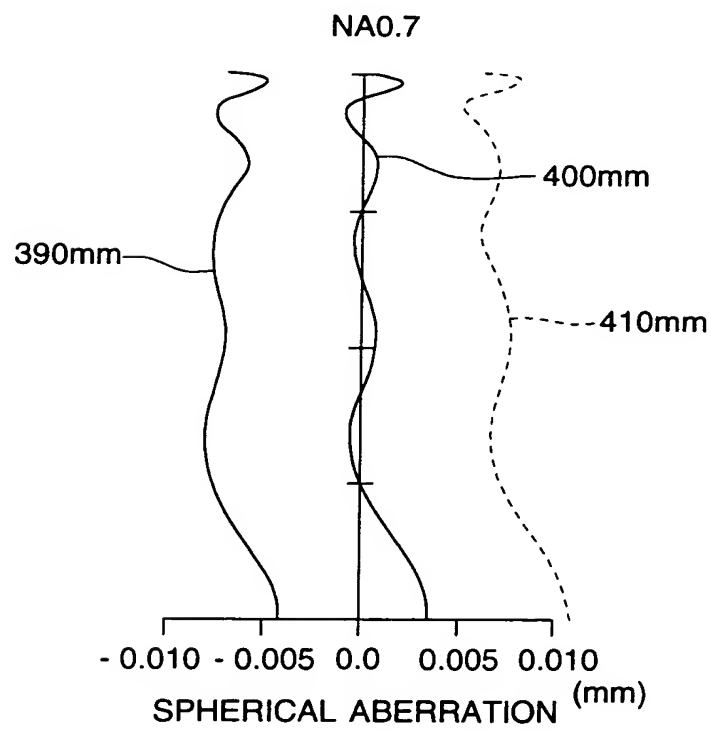


FIG. 132

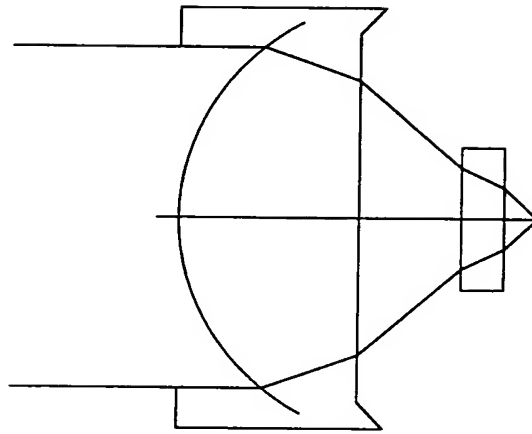


FIG. 133

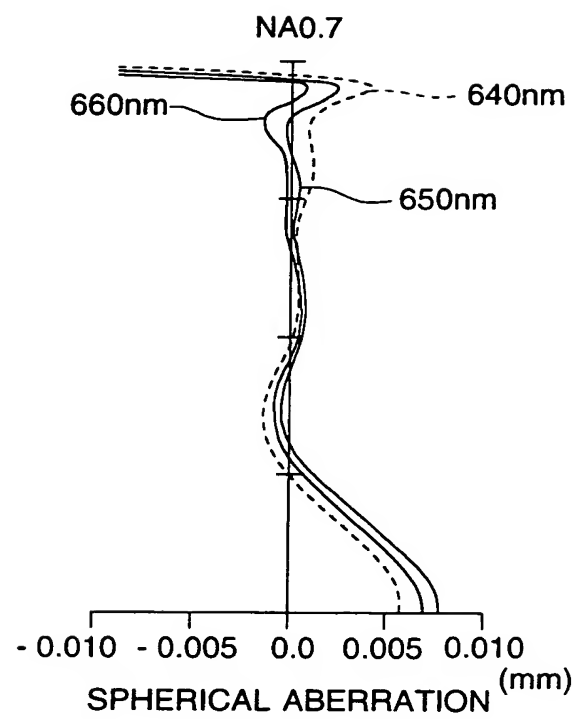


FIG. 134

